North Dakota Technology Education

Content Standards – DRAFT

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North Dakota Department of Career and Technical Education

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Introduction to CTE Standards

CTE Mission
The mission of the State Board for Career and Technical Education is to work with others to provide all North Dakota citizens with the technical skills, knowledge and attitudes necessary for successful performance in a globally competitive workplace.

Technology Education Vision
Technology Education has evolved as technology has advanced. During the industrial era of the 20th century, it was taught in the schools as Industrial Arts, reflecting the industrial society. As advancements have catapulted us into a faster moving, more highly sophisticated, technological society, Technology Education has made curriculum adjustments that reflect these changes.

In a word, Technology Education is about Innovation! It is about how people think. It is how to apply technology in solutions of problems facing society. The aim is to solve problems and create opportunities within a realistic context.

Students use their ingenuity with tools, materials, processes and resources to create solutions and opportunities for themselves and others. The nature of learning goes from the very early years of just "knowing" to more developed applications that relate Engineering, Assessment, Innovations and Technological Systems. It is a dynamic subject in our schools that is as fast moving and as up-to-date as the thinking of technology in our society. It is future workforce thinking!

Goal
Career and Technical Education (CTE) is a series of educational programs organized to prepare students for careers in their chosen fields, to take leadership roles, and to balance their multiple roles in life. The CTE goal is to create a competitive and knowledgeable work force. CTE programs prepare students with the knowledge and skills to make informed career choices, to integrate and apply academic concepts, to prepare for successful participation in a global society, and to engage in lifelong learning.

The North Dakota standards for each CTE program define expectations for student learning. These expectations guide the development of high-quality and relevant career-focused programs that are consistent across the state.

Process
Writing standards is a multi-phase process. Existing national and/or industry standards are the basis for the North Dakota program standards. In addition, standards from other states are reviewed for essential content. A team of expert secondary and postsecondary teachers, business and industry representatives, and the state program supervisor(s) draft the standards document. Once the document is finalized, the State Board for Career and Technical Education approves and adopts the standards. The standards documents are reviewed and updated on a four-year cycle. Further information on the standards can be found at: http://www.nd.gov/cte/standards/

Academic Integration
The Department of Career and Technical Education strongly believes in the importance of academic integration within each program. CTE courses are a vehicle by which students can apply academic knowledge to everyday life. Each standards document includes an academic crosswalk that identifies the standards in English/Language Arts, Mathematics, and Science that relate to CTE standards and can be taught or reinforced in the CTE program. Technology Education also includes crosswalks with Library/Technology Literacy and Social Studies.

Using the Standards
Districts will use the standards as guides for developing curriculum that reflects local reflect local needs and are also and is tailored to prepare young people for the opportunities that exist in North Dakota and elsewhere.

North Dakota Technology Education

Engineering Technology

Foundations of Technology

Advanced Design Applications

Technological Issues and Impacts

Advanced Technological Applications

Grades 9-12

Exploring Technology

Invention and Innovation

Technological Systems

Applying Technology

Grades 6-8

Elementary Focus: Technology Integration

Grades K-5
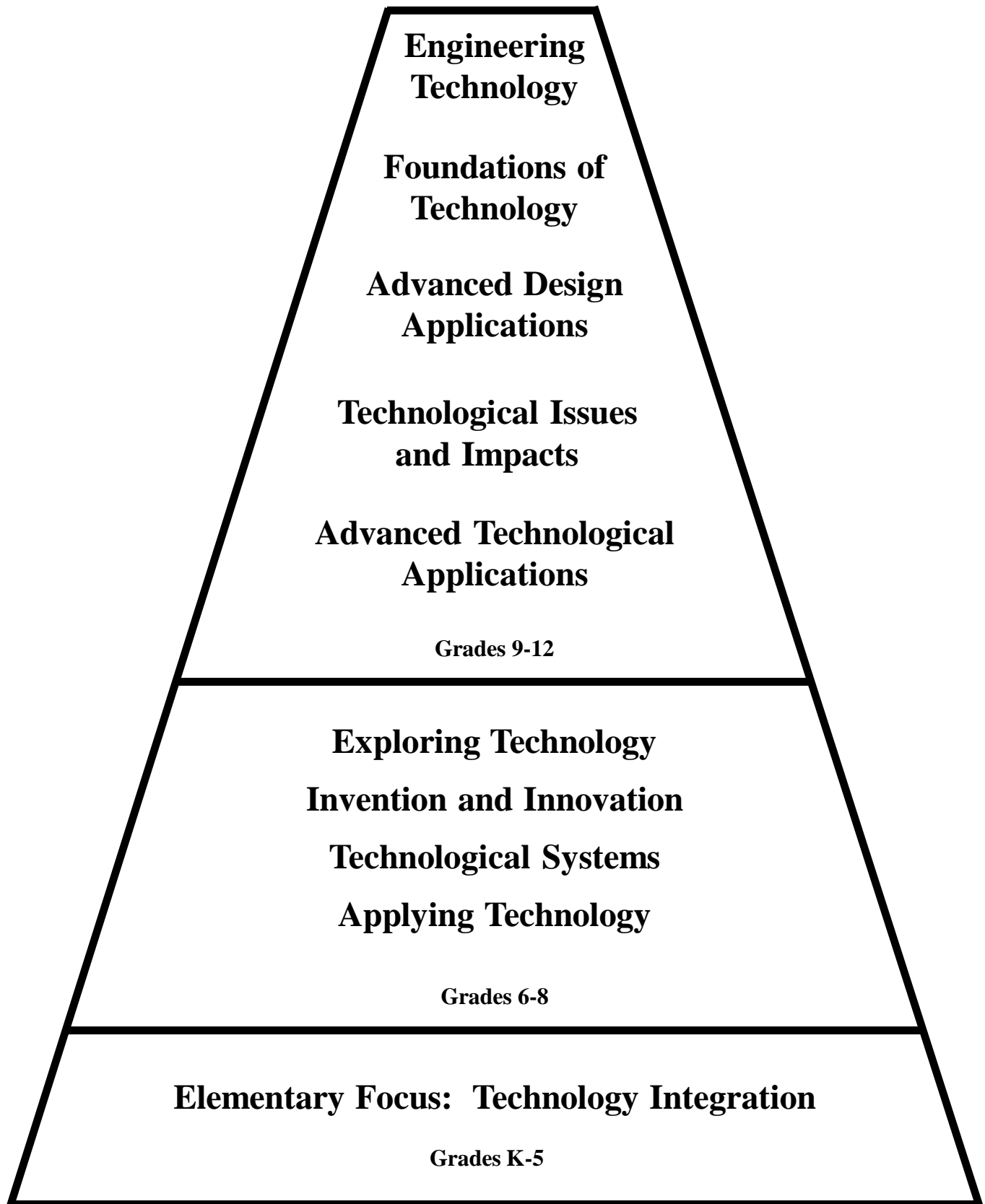
Definitions

Each standard includes one or more topic statements as well as competencies. The competencies are then categorized into three divisions: Introductory, Core, and Advanced. These divisions can further be defined as:

Introductory: Learners at this level **explore** and become more **aware** of the content within the subject.

Core: Learners at this level **experience** acquired knowledge by **applying** it to familiar situations and to themselves.

Advanced: Learners at this level a**nalyze, synthesize, judge, assess** and **evaluate** knowledge in accord with their own goals, values and beliefs and/or real situations.

Standards at a Glance

COMPREHENSIVE STANDARDS

1. CHARACTERISTICS AND SCOPE OF TECHNOLOGY
   o Recognize the characteristics and scope of technology.
2. CORE CONCEPTS OF TECHNOLOGY
   o Connect the core concepts of technology.
3. TECHNOLOGICAL RELATIONSHIPS
   o Interpret the relationships among technologies and the connections between technology and other fields of study.
4. EFFECTS OF TECHNOLOGY
   o Predict cultural, social, economic, and political effects of technology.
5. TECHNOLOGY AND THE ENVIRONMENT
   o Investigate the effects of technology on the environment.
6. DEVELOPMENT AND USE OF TECHNOLOGY
   o Examine the role of society in the development and use of technology
7. INFLUENCE OF TECHNOLOGY
   o Isolate the influences of technology on history.
8. ATTRIBUTES OF DESIGN
   o Explore the attributes of design.
9. ENGINEERING DESIGN
   o Integrate engineering design.
10. PROBLEM SOLVING
    o Translate the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.
11.0 APPLICATION OF THE DESIGN PROCESS
    o Implement the design process.

12. TECHNOLOGICAL PRODUCTS AND SYSTEMS
    o Use and maintain technological products and systems.
13. IMPACTS OF PRODUCTS AND SYSTEMS
    o Assess the impact of products and systems.
14. MEDICAL TECHNOLOGIES
    o Relate medical technologies for selection and use.
15. AGRICULTURAL AND RELATED BIOTECHNOLOGIES
    o Understand, select and use agricultural and related biotechnologies.
16. ENERGY AND POWER TECHNOLOGIES
    o Research and develop an understanding of how to select and use energy and power technologies.
17. INFORMATION AND COMMUNICATION TECHNOLOGIES
    o Select and use information and communication technologies.
18. TRANSPORTATION TECHNOLOGIES
    o Research and develop an understanding of how to select and use of transportation technologies.
19. MANUFACTURING TECHNOLOGIES
    o Understand, select and use manufacturing technologies.
20. CONSTRUCTION TECHNOLOGIES
    o Understand, select and use of construction technologies.

Keys to Employability

Basic Skills

1. Readingà Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules.
2. Writingà Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts.
3. Arithmetic/Mathematicsà Performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques.
4. Listeningà Receives, attends to, interprets, and responds to verbal messages and other cues.
5. Speakingà Organizes ideas and communicates orally.

Thinking Skills

1. Creative Thinkingà Generates new ideas.
2. Decision Makingà Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative.
3. Problem Solvingà Recognizes problems and devises and implements plan of action.
4. Seeing Things in the Mind's Eyeà Organizes, processes symbols, pictures, graphs, objects, and other information.
5. Knowing How to Learnà Uses efficient learning techniques to acquire and apply new knowledge and skills.
6. Reasoningà Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.

Personal Qualities

1. Responsibilityà Exerts a high level of effort and perseveres towards goal attainment.
2. Self-Esteemà Believes in own self worth and maintains a positive view of self.
3. Sociabilityà Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group setting.
4. Self-Managementà Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.
5. Integrity/Honestyà Chooses ethical courses of action.

Resources

1. Timeà Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules.
2. Moneyà Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives.
3. Material and Facilitiesà Acquires, stores, allocates, and uses materials or space efficiently.
4. Human Resourcesà Assesses skills and distributes work accordingly, evaluates performance and provides feedback.

Technology

1. Selects Technologyà Chooses procedures, tools, or equipment including computers and related technologies.
2. Applies Technologyà Understands overall intent and proper procedures for setup and operation of equipment.

Standard 1:   Characteristics and Scope of Technology: Recognize the characteristics and scope of technology.

Student Competencies

Introductory: Grades K-5
1 A   Recognize the differences between the natural world and the human made world.
1 B   Recognize how people use tools and techniques to help them do things.
1 C   Categorize things that are found in nature from things that are human made in how they are produced and used.
1 D   Describe how tools, materials, and skills are used to make things and carry out tasks.
1 E   Connect how creative thinking as well as economic and cultural influences shape technological development.

Core:

Grades 6-8
1 F   Develop new products and systems to solve problems or to help do things that could not be done without the help of technology.
1 G   Recognize that the development of technology is a human activity, a result of individual or collective needs, and the ability to be creative.
1 H   Discover how technology is closely linked to creativity which has resulted in innovation.
1 I   Examine and demonstrate how corporations can often create demand for a product by bringing it onto the market and advertising it.

Grades 9-12
1 J   Analyze how the nature and development of technological knowledge and processes are functions of the setting.
1 K   Correlate the rate of technological development with diffusion which is increasing rapidly.
1 L   Connect how inventions and innovations are the results of specific, goal-directed research.
1 M   Explain why most development of technologies is driven by the profit motive and the market.

Standard 1: Characteristics and Scope of Technology: Recognize the characteristics and scope of technology.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex. Capitalization, dialogues, title of people, things punctuation, and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and /or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.
8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topic developments.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex. Television, film, music) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech (ex. Verbs, progressive tense)
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text, ex. Essays, directions.
9.3.4	Develop a focus for composition ex. Theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, & order.
9.3.12	Use technology ex. Publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.

Standard 1: Characteristics and Scope of Technology: Recognize the characteristics and scope of technology.

Academic Cross Walk

English Language Arts - Cont.

9.4.5 Use critical listening skills ex. Reflection.	11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
9.5.1 Identify existing and developing media.	
9.5.2 Access media (television, film, music) for a variety of purposes.	11.1.4 Verify the quality, accuracy, and usefulness of information.
9.6.2 Use conventions of grammar related to parts of speech.	11.1.7 Evaluate the research process and develop strategies for improving it.
9.6.3 Use conventions of punctuations.	11.2.6 Apply prior knowledge of contents to interpret meaning of text.
10.1.2 Know ways to effectively search electronic databases.	11.2.7 Read for a variety of purposes and intents.
10.1.4 Use relevant information.	11.2.10 Use etymology to define words.
10.1.5 Organize information from a variety of sources into a unified whole.	11.3.5 Use a variety of supporting details.
10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.	11.3.8 Incorporate visual aids (ex. Graphs, tables) into written work to enhance meaning.
10.1.7 Paraphrase information.	11.4.1 Analyze the audience and adjust message and wording to suit the purpose.
10.1.11 Present research information.	11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
10.2.1 Summarize information from nonfiction genres.	
10.2.2 Identify techniques used in persuasive writing.	
10.2.3 Read for a variety of purposes and intents.	11.5.2 Apply media (ex. Television, film, music) for a variety of purposes.
10.3.3 Use prewriting techniques to generate ideas.	
10.3.7 Use a variety of supporting details.	11.6.1 Use conventions of grammar, usage and punctuations to edit and revise.
10.3.8 Use language appropriate to the format of the composition.	12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.
10.3.9 Use precise language to describe people, places and things.	12.2.2 Critique details, facts and concepts from nonfiction genres.
10.3.11 Edit and revise compositions with attention to content.	12.2.4 Read for a variety of purposes and intents.
10.3.13 Use knowledge of sentences structure and sentences construction to edit and revise text.	12.2.8 Use technical language/jargon to decipher meaning.
10.4.1 Analyze the audience and adjust message and wording to suit the purpose.	12.3.3 Organize the ideas and details of a composition according to purpose.
10.4.2 Use appropriate body language in oral presentations.	12.5.1 Identify existing and developing media.
10.5.1 Identifying existing and developing media.	12.6.1 Use conventions of grammar, usage and punctuation to edit and revise.
10.5.2 Use media (television, film, music) for a variety of purposes.	
11.1.1 Research topics independently using appropriate sources.	
11.1.2 Evaluate and incorporate information from primarysources.	

Standard 1: Characteristics and Scope of Technology: Recognize the characteristics and scope of technology.

Academic Cross Walk

Library/Tech Literacy

8.1.1   Define a research problem or task.

8.1.3   Access information using a variety of sources.

8.1.4   Use a variety of criteria to evaluate and select information for research.

8.1.5   Use organizational strategies to gather, record, and synthesize information.

8.1.6   Present research (See Standard 2 for details.).

8.2.1   Create media products for a variety of audiences.

8.2.2   Select appropriate communication formats.

8.3.1   Use appropriate terminology and concepts associated with media and technology.

8.3.2   Use and refine skills and procedures needed to operate various media and technology.

8.3.4   Use the most effective media and technology for specific needs.

8.3.5   Understand the potential and limitations of existing media and technology.

8.4.1   Collaborate in group projects and learning objectives.

8.4.2   Develop competence in selecting from a variety of reading, listening and viewing formats.

8.4.3   Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.

8.4.4   Understand different perspectives and the values and beliefs supporting them.

8.5.1   Follow school guidelines for responsible use of technology and information resources.

8.5.2   Use level-appropriate methods to cite and document reference sources.

8.5.4   Understand the past, present, and future impact of technology on society.

12.1.1 Demonstrate awareness of audience when creating media products.

12.1.3 Access information using a variety of sources.

12.1.4 Use a variety of criteria to evaluate and select information for research

12.1.5 Use organizational strategies to record and synthesize information.

12.1.6 Present research.

12.2.1 Demonstrate awareness of audience when creating media products.

12.2.2 Synthesize information to create a product that meets a specific need.

12.2.3 Use a variety of criteria to evaluate media products.

12.2.3 Use a variety of criteria to evaluate media products.

12.3.1 Explain and use appropriate terminology and concepts associated with media and technology

12.3.2 Apply strategies for identifying and solving routine hardware and software problems.

12.3.3 Explain features and uses of current and emerging media and technology.

12.3.4 Explain features and uses of current and emerging media and technology.

12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.

12.4.1 Work cooperatively and collaboratively when using media and technology.

12.4.2 Develop competence and selectivity in reading, listening, and viewing.

12.4.3 Demonstrate self-motivation in seeking information.

12.4.4 Use a variety of media and technology for personal needs and enjoyment.

12.5.1 Follow school policies and responsibilities of information resources.

12.5.2 Demonstrate proper form of citations and bibliography.

12.5.3 Understand and obey intellectual property laws, including copyright, when using information in any format.

12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 1: Characteristics and Scope of Technology: Recognize the characteristics and scope of technology.

Academic Cross Walk

Math	*Science*
7.2.6 Build and sketch three-dimensional solids.	7.2.1 Communicate the results of scientific investigations using an appropriate format; e.g., journals, lab reports, diagrams, presentations, discussions.
7.3.1 Formulate a question; collect, organize and display data using a bar, line and circle graph.	7.6.1 Identify ways in which technology has influenced the course of history and improved the quality of life.
7.5.6 Graph change overtime ex. growth, distance.	7.6.2 Identify technologies (e.g., communication, agriculture, information processing, transportation) that are influenced by societies.
8.1.8 Select and use a computational technique (mental calculation) to solve problems.	8.7.1 Explain the interaction of science and technology with social issues (e.g., mining, natural disasters).
9-10.1.4 Represent a set of date in a matrix.	9-10.2.8 Analyze data found in tables, charts, and graphs to formulate conclusions.
9-10.1.9 Select and use a computational techniques to solve problems involving real numbers.	9-10.5.3 Explain how energy in the Earth system is governed by convection, conduction, and radiation (e.g., heat moves in the Earth's mantle by convection, conduction occurs along the mid-oceanic ridges, energy from the Sun reaches the Earth through radiation).
9-10.3.2 Interpret a given visual representation of a set of data.	
9-10.5.13 Interpret a graphical representations of a real-world situation.	9-10.5.5 Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards and events (e.g., gap time method to predict earthquakes and tsunamis).
11-12.3.1 Choose, construct and interpret a display to represent a set of data.	11-12.5.3 Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion, run-off) on the environment and society.
	11-12.6.3 Explain how designing and implementing technology requires weighing trade-offs between positive and negative impacts on humans and the environment.
	11-12.7.4 Explain how science and technology can influence personal, industrial, and cultural decision-making (e.g., organ transplants, cloning, stem cell research, genetic manipulation, use of genetic profile, archeological discoveries, land management, resource management)..

Standard 1: Characteristics and Scope of Technology: Recognize the characteristics and scope of technology.

Academic Cross Walk

Social Studies

8.1.1 Understand the role of chronology and perspective in describing historical events and periods of history.	12.1.1 Students create a timeline for any appropriate period of history and explain the importance of events chosen.
8.1.2 Understand how key events, people and ideas contributed to North Dakota history.	12.1.4 Understand how key events, people and ideas affected United States history.
8.1.3 Understand how key events, people and ideas contributed to United States history.	12.1.5 Understand how key events, people, and ideas affected world history.
8.3.3 Know the key features of the various kinds of specialized institutions that exist in market economies.	12.2.2 Understand the foundations, operations, and structures of the American political system.
8.5.1 Know the rights and responsibilities of an effective American citizen.	12.3.1 Understand the principles and problems of traditional, command, market and mixed economies.
8.5.2 Understand the necessity of citizen participation in the political process.	12.3.2 Understand how major economic forces and institutions influence individual decisions of producers, consumers, and investors.
8.6.3 Understand how Earth's physical system influences human systems.	12.3.3 Understand how interdependences affects the global marketplace.
8.7.1 Understand the relationship between social-economics and culture.	12.4.1 Use primary sources to analyze, interpret, evaluate, or synthesize information related to social skills.
8.7.2 Understand how culture influences gender roles, ethics, and ideology.	

Standard 2:   Core Concepts of Technology: Connect the core concepts of technology.

Student Competencies

Introductory: Grades K-5

2 A   Differentiate between systems found in nature and those made by humans.
2 B   Recognize that systems have parts or components that help humans complete tasks.
2 C   Show that tools are simple objects that help humans complete tasks.
2 D   Associate how different materials are used in making things.
2 E   Connect how people plan in order to get things done.
2 F   Show how a subsystem is a system that operates as apart of another system.
2 G   Recognize when parts of a system are missing, it may not work as planned.
2 H   Identify resources necessary to get a job done such as tools and machines, materials, information, energy, people, capital, and time.
2 I   Describe tools used to design, make, use and assess technology.
2 J   Discover the materials have many different properties.
2 K   Illustrate how tools and machines extend human capabilities (e.g., holding, lifting, carrying, fastening, separating, and computing, etc.).
2 L   Identify the requirements as well as the limits to designing or making a product or system.

Core:

Grades 6-8

2 M   Model technological systems to include input, processes, output, and at times, feedback.
2 N   Relate how systems thinking involves considering how every part relates to others.
2 O   Differentiate an open-loop system (no feedback path and requires human intervention) with a closed-loop system (uses feedback).
2 P   Connect technological systems one to another.
2 Q   Determine how malfunctions to any part of a system may affect the function and quality of the system.
2 R   Identify and use the requirements of parameters placed on the development of a product or system.
2 S   Recognize the need for careful compromises among competing factors in the trade-off decision process.
2 T   Connect how different technologies involve different sets of processes.
2 U   Show how maintenance is a process of inspecting and servicing a product or system on a regular basis (in order for it to continue functioning properly, to extend its life, or to upgrade its capability).
2 V   Identify control mechanisms or particular steps that people perform using information about the system that causes systems to change.

Grades 9-12

2 W   Demonstrate systems thinking that applies logic and creativity with appropriate compromises to complex real-life problems.
2 X   Show how systems (which are the building blocks of technology) are embedded within larger technological, social, and environmental systems.
2 Y   Deduce how the stability of a technological system is (especially those in the feedback loop).
2 YZ Relate how selecting resources involves trade-offs between competing values (e.g., availability, cost, desirability, waste, etc.).
2 AA Identify and determine the criteria and constraints of a product or system and how they affect the final design and development.

Standard 2:   Core Concepts of Technology: Connect the core concepts of technology.

Student Competencies - Cont.

2 BB Recognize optimization as an ongoing process or methodology for designing or making a product dependent on criteria and constraints.

2 CC   Describe how new technologies create new processes (e.g., computers to silicon chips to miniaturization of computers, etc.).

2 DD Analyze how quality control is used to ensure that a product, service, or system meets established criteria.

2 EE Explain how management is the process of planning, organizing, and controlling work.

2 FF   Examine complex systems that have many layers of controls and feedback loops to provide information.

Standard 2: Core Concepts of Technology: Connect the core concepts of technology.
Academic Cross Walk

English Language Arts

7.1.1   Generate and evaluate questions relevant to research topics.

7.1.2   Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.

7.1.3   Question the accuracy and relevance of information.

7.1.4   Organize research information.

7.1.5   Present research findings, including information and evidence from a variety of sources.

7.2.4   Use prior knowledge and experience to aid text comprehension.

7.2.5   Read to be informed, entertained and persuaded.

7.3.6   Incorporate grade-level appropriate vocabulary in writing.

7.3.7   Use criteria to evaluate own and others' writing.

7.3.9   Edit for grammar, mechanics, usage, and spelling.

7.4.2   Use supporting materials for topics development.

7.4.3   Incorporate research into presentations.

7.5.1   Identify existing and developing media.

7.5.2   Construct media messages.

7.5.5   Define plagiarism and its consequences.

7.6.1   Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.

7.6.3   Use grade-appropriate mechanics and usage.

8.1.2   Use a variety of primary and/or secondary sources to access information.

8.2.2   Use prior knowledge and experiences to aid text comprehensive.

8.2.3   Use a variety of strategies to construct meaning from text.

8.3.4   Use free writing and journal writing to develop ideas for writing topics.

8.3.6   Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10 Use feedback and multiple drafts to revise text for specific purposes.

8.3.12 Incorporate a variety of visual aids in publications.

8.4.2   Use supporting materials for topics development.

8.4.3   Speak for different purposes.

8.5.1   Identify existing and developing media.

8.5.2   Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

8.5.6   Define plagiarism and its consequences.

8.6.2   Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.

9.1.1   Choose a broad topic, state the problem or question.

9.1.2   Formulate a preliminary thesis statement.

9.1.3   Cross reference information.

9.1.4   Evaluate relevancy of information.

9.1.5   Organize information from a variety of sources.

9.1.6   Summarize information.

9.1.7   Identify and avoid plagiarism.

9.1.8   Use primary and secondary sources.

9.1.9   Use graphic organizer.

9.2.3   Differentiate between a variety of nonfiction genres.

9.2.6   Demonstrate oral reading fluency.

9.2.7   Access prior knowledge to interpret meaning.

9.2.8   Read for a variety of purposes and intents.

9.2.15 Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.

9.3.1   Write expository text; ex. essays, directions, letters.

9.3.4   Develop a focus for composition; ex., theme.

9.3.5   Organize the ideas and details of a composition according to purpose.

9.3.8   Use supporting details.

9.3.10 Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

9.3.12 Use technology; ex., publishing software.

Standard 2: Core Concepts of Technology: Connect the core concepts of technology.

Academic Cross Walk

English Language Arts - Cont.

9.4.1   Analyze the audience and adjust message and wording to suit purpose.

9.4.4   Engage in a group discussion.

9.4.5   Use critical listening skills; ex., reflection.

9.5.1   Identify existing and developing media.

9.5.2   Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

9.6.2   Use conventions of grammar related to parts of speech

9.6.3   Use conventions of punctuation.

10.1.2 Know ways to effectively search electronic databases.

10.1.4 Use relevant information.

10.1.5 Organize information from a variety of sources into a unified whole.

10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.

10.1.7 Paraphrase information.

10.1.11 Present research information.

10.2.1 Summarize information from nonfiction genres.

10.2.2 Identify techniques used in persuasive writing.

10.2.3 Read for a variety of purposes and intents.

10.3.3 Use prewriting techniques to generate ideas.

10.3.7 Use a variety of supporting details.

10.3.8 Use language appropriate to the format of the composition.

10.3.9 Use precise language to describe people, places and things.

10.3.11 Edit and revise compositions with attention to content.

10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.

10.4.1 Analyze the audience and adjust message and wording to suit the purpose.

10.4.2 Use appropriate body language in oral presentations.

10.5.1 Identifying existing and developing media.

10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1 Research topics independently using appropriate sources.

11.1.2 Evaluate and incorporate information from primary sources.

11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.

11.1.4 Verify the quality, accuracy and usefulness of information.

11.1.7 Evaluate the research process and develop strategies for improving it.

11.2.6 Apply prior knowledge of contents to interpret meaning of text.

11.2.7 Read for a variety of purposes and intents.

11.2.10 Use etymology to define words.

11.3.5 Use a variety of supporting details.

11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.

11.4.1 Analyze the audience and adjust message and wording to suit the purpose.

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.

11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.

12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.

12.2.2 Critique details, facts, and concepts from nonfiction genres.

12.2.4 Read for a variety of purposes and intents.

12.2.8 Use technical language/jargon to decipher meaning.

12.3.3 Organize the ideas and details of a composition according to purpose.

12.5.1 Identify existing and developing media.

12.5.2 Create a media project for a purpose.

12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Technology Education State Standards

Standard 2: Core Concepts of Technology: Connect the core concepts of technology.
Academic Cross Walk

Library/Tech Literacy

8.1.3   Access information using a variety of sources.
8.1.4   Use a variety of criteria to evaluate and select information for research.
8.1.5   Use organizational strategies to gather, record and synthesize information.
8.1.6   Present research (See standards 2 for details).
8.2.1   Create media products focused for a variety of audiences.
8.2.2   Select appropriate communication formats.
8.2.3   Use a variety of strategies to present media products.
8.3.1   Use appropriate terminology and concepts associated with media and technology.
8.3.2   Use and refine skills and procedures needed to
8.3.2   operate various media and technology.
8.3.3   Develop troubleshooting strategies to solve technical problems.
8.3.4   Use the most effective media and technology for specific needs.
8.3.5   Understand the potential and limitations of existing media and technology.
8.4.1   Collaborate in group projects and learning objectives.
8.4.2   Develop competence in selecting from a variety of reading, listening, and viewing formats.
8.4.3   Demonstrate self-motivation and increasing responsibility related to personal interests.
8.4.4   Understand different perspectives and the value and beliefs supporting them.
8.5.1   Follow school guidelines for responsible use of technology and information resources.
8.5.2   Use level-appropriate methods to cite and documents reference sources.
8.5.4   Understand the past, present and future impact of technology on society.

12.1.1 Define a research problem or task.
12.1.3 Access information using a variety of sources.
12.1.4 Use a variety of criteria to evaluate and select information for research.
12.1.5 Use organizational strategies to record and synthesize information.
12.1.6 Present research (See Standard 2 for details).
12.2.1 Demonstrate awareness of audience when creating media products.
12.2.2 Synthesize information to create a product that meets a specific need.
12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
12.3.3 Apply strategies for identifying and solving routine hardware and software problems.
12.3.4 Explain features and uses of current and emerging media and technology.
12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.
12.4.1 Work cooperatively and collaboratively when using media and technology.
12.4.2 Develop competence and selectivity in reading, listening, and viewing.
12.4.3 Demonstrate self-motivation in seeking information.
12.4.4 Use a variety of media and technology for personal needs and enjoyment.
12.5.1 Follow school policies for responsible use of information resources.
12.5.2 Demonstrate proper form of citations and bibliographies.
12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 2: Core Concepts of Technology: Connect the core concepts of technology.

Academic Cross Walk

Math

7.1.8	Solve real-world problems using integers, fractions, decimals, and percents.
7.1.10	Use proportions to solve problems.
7.4.3	Select the appropriate measure of perimeter, area, surface area, or volume to solve a problem.
7.4.4	Select and use appropriate tools and units to determine the measurements needed for calculating perimeter, circumference, area, surface area, and volume.
8.1.2	Solve real-world problems involving ratio, proportion, and percent.
8.1.7	Add, subtract, multiply, and divide integers.
8.1.8	Select and use a computational technique (e.g.mental calculation, paper-and-pencil technology) to solve problems.
9-10.1.8	Apply estimation skills to predict realistic solutions to problems.
9-10.1.9	Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers.
9-10.5.13	Determine whether a relation is a function by examining various representations of the relation, e.g., table, graph, equation, set of ordered pairs.
9-10.5.14	Draw conclusions about a situation being modeled.

Science

7.1.4	Identify the relationship between form and function (e.g., wings, fins, and feet).
7.6.1	Identify ways in which technology has influenced the course of history and improved the quality of life.
8.1.1	Organize changes (e.g., patterns, cycles) that occur sequentially in systems.
8.5.7	Explain the changes Earth has undergone over geologic time (e.g., fossil record, plate tectonics, climate change, glaciation).
8.7.1	Explain the interaction of science and technology with social issues (e.g., mining, natural disasters).
9-10.1.1	Explain how models can be used to illustrate scientific principles.
9-10.1.2	Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell).
11-12.1.1	Explain how scientists create and use models to address scientific knowledge.
11-12.1.3	Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems).
11-12.2.5	Use technology and mathematics to improve investigations and communications.

Social Studies

8.4.3	Use technology to gather, organize, record, interpret and evaluate information related to social studies.
8.6.3	Understand how Earth's physical system influences human systems.
8.6.4	Understand how human activity affects the physical environment.
12.4.3	Students use the Internet to research and and construct multi-media presentations on an historical event (e.g., Civil War, World War I, World War II, Battle of the Big Horn).

Standard 3:   Technology Relationships: Interpret the relationships among technologies and the connections between technology and other fields of study.

Student Competencies

Introductory: Grades K-5

3 A   Recognize that the study of technology uses many of the same ideas and skills as other subjects.

3 B   Combine multiple forms of technologies.

3 C   Distinguish the relationships between technology and other fields of study.

Core:

Grades 6-8

3 D   Show how technological systems often interact with one another.

3 E   Illustrate how a product, system, or environment developed for one setting may be applied to another setting.

3 F   Correlate how knowledge gained from other fields of study has a direct effect on the development of technological products and systems.

Grades 9-12

3 H   Relate how technological innovation results when ideas, knowledge, or skills are shared within a technology, among technologies, or across other fields.

3 I   Examine why technological ideas are sometimes protected through the process of patenting.

3 J   Recognize how technological progress has advanced science and mathematics.

Advanced:

3 G   Adapt an existing innovation developed for one purpose into a different function to demonstrate technology transfer.

Standard 3: Technology Relationships: Interpret the relationships among technologies and the connections between technology and other fields of study.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 3: Technology Relationships: Interpret the relationships among technologies and the connections between technology and other fields of study.

Academic Cross Walk

English Language Arts - Cont.

9.3.12 Use technology; ex., publishing software.
9.4.1 Analyze the audience and adjust message and wording to suit purpose.
9.4.4 Engage in a group discussion.
9.4.5 Use critical listening skills; ex., reflection.
9.5.1 Identify existing and developing media.
9.5.2 Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2 Use conventions of grammar related to parts of speech.
9.6.3 Use conventions of punctuation.
10.1.2 Know ways to effectively search electronic databases.
10.1.4 Use relevant information.
10.1.5 Organize information from a variety of sources into a unified whole.
10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7 Paraphrase information.
10.1.11 Present research information.
10.2.1 Summarize information from nonfiction genres.
10.2.2 Identify techniques used in persuasive writing.
10.2.3 Read for a variety of purposes and intents.
10.3.3 Use prewriting techniques to generate ideas.
10.3.7 Use a variety of supporting details.
10.3.8 Use language appropriate to the format of the composition.
10.3.9 Use precise language to describe people, places and things.
10.3.11 Edit and revise compositions with attention to content.
10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1 Analyze the audience and adjust message and wording to suit the purpose.
10.4.2 Use appropriate body language in oral presentations.
10.5.1 Identifying existing and developing media.
10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1 Research topics independently using appropriate sources.
11.1.2 Evaluate and incorporate information from primary sources.
11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4 Verify the quality, accuracy and usefulness of information.
11.1.7 Evaluate the research process and develop strategies for improving it.
11.2.6 Apply prior knowledge of contents to interpret meaning of text.
11.2.7 Read for a variety of purposes and intents.
11.2.10 Use etymology to define words.
11.3.5 Use a variety of supporting details.
11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1 Analyze the audience and adjust message and wording to suit the purpose.
11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2 Critique details, facts, and concepts from nonfiction genres.
12.2.4 Read for a variety of purposes and intents.
12.2.8 Use technical language/jargon to decipher meaning.
12.3.3 Organize the ideas and details of a composition according to purpose.
12.5.1 Identify existing and developing media.
12.5.2 Create a media project for a purpose.
12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 3: Technology Relationships: Interpret the relationships among technologies and the connections between technology and other fields of study.

Academic Cross Walk

Library/Tech Literacy

Library/Tech Literacy	
8.1.3 Access information using a variety of sources.	12.1.3 Access information using a variety of sources.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.5 Use organizational strategies to gather, record and synthesize information.	12.1.5 Use organizational strategies to record and synthesize information.
8.2.1 Create media products focused for a variety of audiences.	12.2.1 Demonstrate awareness of audience when creating media products.
8.2.2 Select appropriate communication formats.	12.2.2 Synthesize information to create a product that meets a specific need.
8.2.3 Use a variety of strategies to present media products.	12.2.3 Use a variety of criteria to evaluate media products.
8.2.4 Use a variety of techniques to evaluate the effectiveness of media products.	12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.3.4 Use the most effective media and technology for specific needs.	12.3.4 Explain features and use of current and emerging media and technology.
8.4.1 Collaborate in group projects and learning objectives.	12.3.5 Explain ways in which social & economic forces influence which technologies will be developed and used.
8.4.2 Develop competence in selecting from a variety of reading, listening and viewing formats.	12.4.1 Work cooperatively and collaboratively when using media and technology.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.4.2 Develop competence and selectively in reading, listening and viewing.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.4.3 Demonstrate self-motivation in seeking information.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.4.4 Use a variety of media and technology for personal needs and enjoyment.
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.5.1 Follow school policies for responsible use of information resources.
8.5.3 Demonstrate knowledge of intellectual property rights laws.	12.5.2 Demonstrate proper form of citations and bibliographies.
8.5.4 Understand the past, present and future impact of technology on society.	12.5.3 Understand and obey intellectual property law, including copyright when using information in any format.
	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 3: Technology Relationships: Interpret the relationships among technologies and the connections between technology and other fields of study.

Academic Cross Walk

Science

6.6.3	Explain the relationship between science and technology.
11-12.1.1	Explain how scientists create and use models to address scientific knowledge.
11-12.1.3	Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems).
11-12.5.3	Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion, run-off) on the environment and society.
11-12.6.2	Identify examples of how new technologies advance science.
11-12.6.3	Explain how designing and implementing technology requires weighing trade-offs between positive and negative impacts on humans and the environment.

Social Studies

8.1.3	Understand how key events, people and ideas contributed to United States history.
8.1.4	Understand how key events, people and ideas contributed to world history.
8.4.1	Use various map forms, tools and technologies to acquire, process and report information related to social studies.
8.4.2	Use primary and secondary sources to gather, interpret, analyze and evaluate information related to social studies.
8.4.3	Use technology to gather, organize, record, interpret and evaluate information related to social studies.
8.5.1	Know the rights and responsibilities of an effective American citizen.
8.6.1	Understand how to use geographic tools to describe and locate physical features and places.
8.6.3	Understand how Earth's physical system influences human systems.
8.6.4	Understand how human activity affects the physical environment.
12.1.4	Understand how key events, people and ideas affected United States history.
12.1.5	Understand how key events, people, and ideas affected world history.
12.5.1	Understand the benefits and challenges of the rights of citizenship.

Math

None

Standard 4:   Effects of Technology: Predict cultural, social, economical and political effects of technology.

Student Competencies

Introductory: Grades K-5

4 A   Identify the use of tools and machines as helpful or harmful.

4 B   Recognize that the use of technology can be good or bad.

4 C   Predict the unintended consequences from the use of technology.

Core:

Grades 6-8

4 D   Show how the use of technology affects humans in various ways (safety, comfort, choices, and attitudes) about technology's development and use.

4 E   Examine how technology, by itself, is neither good nor bad, but decisions about the use of products and systems can result in desirable or undesirable consequences.

4 F   Determine how the development and use of technology poses ethical issues.

4 G   Identify economic, political, and cultural issues influenced by the development and use of technology.

Grades 9-12:

4 H   Connect changes caused by the use of technology ranging from gradual to rapid and from subtle to obvious.

Advanced:

4 I   Make decisions about the use of technology by weighing the trade-offs between the positive and negative effects.

4 J   Debate ethical considerations important to the development, selection, and use of technologies.

4 K   Hypothesize how the transfer of a technology from one society to another can cause cultural, social, economic, and political changes affecting both societies to varying degrees.

Standard 4: Effects of Technology: Predict cultural, social, economical and political effects of technology.

Academic Cross Walk

English Language Arts

7.1.1 Generate and evaluate questions relevant to research topics.	8.3.12 Incorporate a variety of visual aids in publications.
7.1.2 Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.	8.4.2 Use supporting materials for topics development.
7.1.3 Question the accuracy and relevance of information.	8.4.3 Speak for different purposes.
7.1.4 Organize research information.	8.5.1 Identify existing and developing media.
7.1.5 Present research findings, including information and evidence from a variety of sources.	8.5.2 Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
7.2.4 Use prior knowledge and experience to aid text comprehension.	8.5.6 Define plagiarism and its consequences.
7.2.5 Read to be informed, entertained and persuaded.	8.6.2 Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
7.3.6 Incorporate grade-level appropriate vocabulary in writing.	9.1.1 Choose a broad topic, state the problem or question.
7.3.7 Use criteria to evaluate own and others' writing.	9.1.2 Formulate a preliminary thesis statement.
7.3.9 Edit for grammar, mechanics, usage, and spelling.	9.1.3 Cross reference information.
	9.1.4 Evaluate relevancy of information.
7.4.2 Use supporting materials for topics development.	9.1.5 Organize information from a variety of sources.
7.4.3 Incorporate research into presentations.	9.1.6 Summarize information.
7.5.1 Identify existing and developing media.	9.1.7 Identify and avoid plagiarism.
7.5.2 Construct media messages.	9.1.8 Use primary and secondary sources.
7.5.5 Define plagiarism and its consequences.	9.1.9 Use graphic organizer.
Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining,	9.2.3 Differentiate between a variety of nonfiction genres.
	9.2.6 Demonstrate oral reading fluency.
	9.2.7 Access prior knowledge to interpret meaning.
7.6.1 italicizing, usage, double negatives.	9.2.8 Read for a variety of purposes and intents.
7.6.3 Use grade-appropriate mechanics and usage.	9.2.15 Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
8.1.2 Use a variety of primary and/or secondary sources to access information.	9.3.1 Write expository text; ex. essays, directions, letters.
8.2.2 Use prior knowledge and experiences to aid text comprehensive.	9.3.4 Develop a focus for composition; ex., theme.
8.2.3 Use a variety of strategies to construct meaning from text.	9.3.5 Organize the ideas and details of a composition according to purpose.
	9.3.8 Use supporting details.
8.3.4 Use free writing and journal writing to develop ideas for writing topics.	9.3.10 Edit and revise compositions for proper mechanics & grammar, syntax, diction, & order.
8.3.6 Use prewriting product to create a first draft emphasizing details and referencing sources.	9.3.12 Use technology; ex., publishing software.
	9.4.1 Analyze the audience and adjust message and wording to suit purpose.
8.3.10 Use feedback and multiple drafts to revise text for specific purposes.	9.4.4 Engage in a group discussion.

Standard 4: Effects of Technology: Predict cultural, social, econimical and political effects of technology.

Academic Cross Walk

English Language Arts - Cont.

9.4.5 Use critical listening skills; ex., reflection.
9.5.1 Identify existing and developing media.
9.5.2 Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2 Use conventions of grammar related to parts of speech.
9.6.3 Use conventions of punctuation.
10.1.2 Know ways to effectively search electronic databases.
10.1.4 Use relevant information.
10.1.5 Organize information from a variety of sources into a unified whole.
10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7 Paraphrase information.
10.1.11 Present research information.
10.2.1 Summarize information from nonfiction genres.
10.2.2 Identify techniques used in persuasive writing.
10.2.3 Read for a variety of purposes and intents.
10.3.3 Use prewriting techniques to generate ideas.
10.3.7 Use a variety of supporting details.
10.3.8 Use language appropriate to the format of the composition.
10.3.9 Use precise language to describe people, places and things.
10.3.11 Edit and revise compositions with attention to content.
10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1 Analyze the audience and adjust message and wording to suit the purpose.
10.4.2 Use appropriate body language in oral presentations.
10.5.1 Identifying existing and developing media.
10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.1.1 Research topics independently using appropriate sources.

11.1.2 Evaluate and incorporate information from primary sources.
11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4 Verify the quality, accuracy and usefulness of information.
11.1.7 Evaluate the research process and develop strategies for improving it.
11.2.6 Apply prior knowledge of contents to interpret meaning of text.
11.2.7 Read for a variety of purposes and intents.
11.2.10 Use etymology to define words.
11.3.5 Use a variety of supporting details.
11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1 Analyze the audience and adjust message and wording to suit the purpose.
11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2 Critique details, facts, and concepts from nonfiction genres.
12.2.4 Read for a variety of purposes and intents.
12.2.8 Use technical language/jargon to decipher meaning.
12.3.3 Organize the ideas and details of a composition according to purpose.
12.5.1 Identify existing and developing media.
12.5.2 Create a media project for a purpose.
12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 4: Effects of Technology: Predict cultural, social, econimical and political effects of technology.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.3 Access information using a variety of sources.	12.1.3 Access information using a variety of sources.
8.1.5 Use organizational strategies to gather, record and synthesize information.	12.1.5 Use organizational strategies to record and synthesize information.
8.1.6 Present research (See standard 2 for details).	12.1.6 Present research (see standard 2 for details).
8.2.1 Create media products focused for a variety of audiences.	12.2.1 Demonstrate awareness of audience when creating media products.
8.2.3 Use a variety of strategies to present media products.	12.2.2 Synthesize information to create a product that meets a specific need.
8.2.4 Use a variety of techniques to evaluate the effectiveness of media products.	12.2.3 Use a variety of criteria to evaluate media products.
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.3.3 Develop troubleshooting strategies to solve technical problems.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.3.4 Use the most effective media and technology for specific needs.	12.3.4 Explain features and uses of current and emerging media and technology.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.
8.4.1 Collaborate in group projects and learning objectives.	12.4.1 Work cooperative and collaboratively when using media and technology.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.4.3 Demonstrate self-motivation in seeking information.
8.4.4 Understand different perspectives and the value and beliefs supporting them.	12.4.4 Use a variety of media and technology for personal needs and enjoyment.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.5.1 Follow school policies for responsible use of information resources.
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.5.2 Demonstrate proper form of citations and information resources.
	12.5.4 Understand the impact of equitable access to information in democracy.

Standard 4: Effects of Technology: Predict cultural, social, econimical and political effects of technology.

Academic Cross Walk

Math

7.1.4	Solve real-world problems using integers, fractions decimals, and percents.
7.3.1	Formulate a question; collect, organize and display data using a bar, line or circle graph.
7.5.1	Formulate a question; collect, organize and display data using a bar, line or circle graph.
7.5.6	Create tables and graphs to analyze and describe patterns.
9-10.1.4	Graph change over time ex. growth, distance.
9-10.3.1	Represent a set of data in a matrix. Construct appropriate displays of given data.
9-10.3.2	Interpret a given visual representation of a set of data.
9-10.5.3	Determine whether a relation is a function by examining various representations of the relations.
11-12.3.1	Choose, construct and interpret a display to represent a set of data.

Science

9-10.2.7	Maintain clear and accurate records of scientific investigations.
11-12.2.1	Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.
11-12.2.3	Use data from scientific investigations to accept or reject a hypothesis.

Social Studies

8.7.1	Understand the relationship between socio-economics and culture.
8.7.2	Understand how culture influences gender roles, ethics and ideology.
8.7.3	Understand how culture influences family relationships, religion, and social institutions.

12.3.2	Students participate in stock market simulation, conducting research and preparing reports on their companies.
12.4.3	Computer literacy, web site sources, computer simulations, multimedia presentations.

Standard 5: **Technology and the Environment: Investigate the effects of technology on the environment.**

Student Competencies

Introductory: Grades K-5

5 A   Select materials that can be reused and/or recycled.

5 B   Observe that waste must be appropriately recycled or disposed of to prevent unnecessary harm to the environment

5 C   Recognize that the use of technology affects the environment in good or bad ways.

Core:

Grades 6-8

5 D   Examine how the management of waste produced by technological systems is an important societal issue.

5 E   Explore how technologies can be used to repair damage cause by natural disasters and to break down waste from the use of various products and systems.

5 F   Investigate how decisions to develop and use technologies often put environmental and economic concerns in direct competition with one another.

Grades 9-12

5 G   Specify how humans can devise technologies to conserve water, soil, and energy through such techniques as reusing, reducing, and recycling.

5 H   Determine considerations of trade-offs when new technologies are developed to reduce the use of resources.

5 I   Monitor various aspects of the environment to provide information for decision-making with the aid of technology.

5 J   Associate the alignment of technological processes with natural processes to maximize performance and reduce negative impacts on the environment.

5 K   Recognize how humans devise technologies to reduce the negative consequences of other technologies.

5 L   Relate how the decisions regarding the implementation of technologies involve the weighing of trade-offs between predicted positive and negative effects on the environment.

Standard 5: Technology and the Environment: Investigate the effects of technology on the environment.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.
8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme. Organize the ideas and details of a composition according to purpose.
9.3.5	Use supporting details.
9.3.8	Edit and revise compositions for proper mechanics & grammar, syntax, diction, & order.
9.3.10	Use technology; ex., publishing software.
9.3.12	Analyze the audience and adjust message and wording to suit purpose.

Standard 5: Technology and the Environment: Investigate the effects of technology on the environment.

Academic Cross Walk

English Language Arts - Cont.

9.4.1	Engage in a group discussion.
9.4.4	Use critical listening skills; ex., reflection.
9.4.5	Identify existing and developing media.
9.5.1	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.1.1	Research topics independently using appropriate sources.

11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 5: Technology and the Environment: Investigate the effects of technology on the environment.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.3 Access information using a variety of sources.	12.1.2 Plan a research strategy.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.3 Access information using a variety of sources.
8.1.5 Use organizational strategies to gather, record and synthesize information.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.2.1 Create media products focused for a variety of audiences.	12.1.5 Use organizational strategies to record and synthesize information.
8.2.2 Select appropriate communication formats.	12.1.6 Present research.
8.2.3 Use a variety of strategies to present media products.	12.2.1 Demonstrate awareness of audience when creating media products.
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.2.2 Synthesize information to create a product that meets a specific need.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
8.3.4 Use the most effective media and technology for specific needs.	12.3.1 Demonstrate advanced knowledge and skills in various media and technology.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.2 Apply strategies for identifying and solving routine hardware and software problems.
8.4.1 Collaborate in group projects and learning objectives.	12.3.3 Explain features and uses of current and emerging media and technology.
8.4.2 Develop competence in selecting from a variety of reading, listening and viewing formats.	12.3.4 Explain ways in which social and economic forces influence which technologies will be developed and used.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.4.1 Work cooperatively and collaboratively when using media and technology.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.4.2 Develop competence and selectivity in reading, listening and viewing.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.4.3 Demonstrate self-motivation in seeking information.
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.4.4 Use a variety of media and technology for personal needs and enjoyment.
8.5.4 Understand the past, present, and future impact of technology on society.	12.5.1 Follow school policies for responsible use of information resources.
	12.5.2 Demonstrate proper form of citations and bibliographies.
	12.5.3 Understand and obey intellectual property laws, including copyright when using information in any format.
	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 5: Technology and the Environment: Investigate the effects of technology on the environment.

Academic Cross Walk

Math

7.3.1	Formulate a question; collect, organize and display data using a bar, line and circle graph.
7.5.1	Create tables and graphs to analyze and describe patterns.
7.5.6	Graph change over time; e.g., growth, distance, population.

9-10.3.1 Construct appropriate displays of given data; i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.

9-10.3.2 Interpret a given visual representation (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots) of a set of data.

9-10.5.13 Interpret a graphical representation of a real-world situation.

11-12.3.1 Choose, construct, and interpret a display to represent a set of data.

Science

7.5.1	Identify the factors (latitude, altitude, mountains, bodies of water) that affect the Earth's climate.
7.5.3	Identify the Earth's renewable and nonrenewable resources (e.g., solar, wind, water, soil, metals).
7.6.1	Identify ways in which technology has influenced the course of history & improved the quality of life.
7.6.2	Identify technologies (e.g., communication, agriculture, information processing, transportation) that are influenced by societies.
7.7.1	Explain how science affects personal health (e.g., injury prevention, immunization, organ transplant, medical scanning devices).
8.7.1	Explain the interaction of science and technology with social issues (e.g., mining, natural disasters).
9-10.5.3	Explain how energy in the Earth system is governed by convection, conduction, and radiation (e.g., heat moved in the Earth's mantle by convention, conduction occurs along the mid-oceanic ridges, energy from the Sun reaches the Earth through radiation.

9-10.5.5 Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards & events (e.g., Gap time method to predict earthquakes and tsunamis).

9-10.6.2 Explain how scientific principles have been used to create common technologies (e.g., household appliances, automotive parts, agricultural equipment, textiles, fabrics, computers, Internet resources, CD-Roms).

11-12.5.3 Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion) on the environment and society.

11-12.6.3 Explain how designing & implementing technology requires weighing trade-offs between positive & negative impacts on humans & the environment.

11-12.7.2 Explain ways renewable and nonrenewable resources are managed (e.g., land reclamation, forest management, CRP, hunting licenses, energy-conserving technologies).

11-12.7.4 Explain how science & technology can influence personal, industrial, and cultural decision- cell making (e.g., organ transplants, cloning, stem research, genetic manipulation, use of genetic profile, archeological discoveries, land mgmt., resource management).

Standard 5: Technology and the Environment: Investigate the effects of technology on the environment.

Academic Cross Walk

Social Studies

8.1.1   Understand the role of chronology & perspective in describing historical events & periods of history.

8.1.2   Understand how key events, people and ideas contributed to North Dakota history.

8.1.3   Understand how key events, people and ideas contributed to United State history.

8.1.4   Understand how key events, people, and ideas contributed to world history.

8.2.3   Understand the power of the legislative, executive & judicial branches and the concept of checks & balances.

8.2.4   Understand the structure, function, purpose, & role of the local, state, tribal, & federal government.

8.3.3   Know the key features of various kinds of specialized institutions that exist in market.

8.4.2   Use primary & secondary sources to gather, interpret analyze and evaluate information related to social studies.

8.4.3   Use technology to gather, organize, record, interpret & evaluate information related to social studies

8.5.1   Know the rights & responsibilities of an effective American citizen.

8.5.2   Understand the necessity of citizen participation in the political process.

8.6.1   Understand how to use geographical tools to describe and locate physical features & places.

8.6.3   Understand how Earth's physical system influences human systems.

8.6.4   Understand how human activity affects the physical environment.

8.6.5   Understand how geographic methods and tools are used to interpret the past, understand the present, and plan for the future.

8.7.1   Understand the relationship between socio-economics and culture.

8.7.2   Understand how culture influences gender roles, ethics, and ideology.

8.7.3   Understand how culture influences family relationships, religion and social institutions.

12.1.4   Understand how key events, people and ideas affected United States history.

12.1.5   Understand how key events, people, and ideas affected world history.

12.2.2   Understand the foundations, operations & structure of the American political system.

12.3.1   Understand the principles & problems of traditional, command, market & mixed economies. Understand how major economic forces &

12.3.2   institutions influence individual decisions of procedures, consumers, and investors.

12.3.31   Understand how interdependence affects the global marketplace.

2.4.1   Use primary sources to analyze, interpret evaluate or synthesize information related to social studies.

12.4.2   Interpret and evaluate the credibility and primary and secondary sources.

12.4.3   Use technology to access, record, and analyze information related to social studies.

12.5.1   Understand the benefits and challenges of the rights of citizenships.

12.5.2   Understand the responsibilities of citizenship and the components of civic participation.

12.6.2   Understand the interactions of geography and the physical and human environment.

12.6.3   Know the characteristics and use of geographic tools and use these tools to organize and communicate information.

Standard 6: Development and Use of Technology: Examine the roll of society in the development and use of technology.

Student Competencies

Introductory: Grades K-5

6 A   Observe that products are made to meet individual needs and wants.
6 B   Identify how technologies are devised or changed to meet people's wants and needs.
6 C   Describe how individual, family, community, and economic concerns may expand or limit the technologies.

Core:

Grades 6-8

6 D   Summarize the social and cultural priorities and values reflected in technological devices.
6 E   Examine why meeting societal expectations is the driving force behind the acceptance and use of products and systems.
6 F   Compare and contrast difference cultures and the development of their own technologies to satisfy individual and shared needs, wants, and values.
6 G   Interpret whether decisions to develop a technology is influenced by societal opinions, demands, and/or corporate cultures.

Grades 9-12

6 H   Explain the different factors that contribute to shaping the design of and demand for various technologies e.g., advertising, the strength of the economy, the goals of a company, the latest fads, etc.).
6 I   Interpret whether decisions to develop a technology are influenced by societal opinions, demands, and/or corporate cultures.
6 J   Explain the different factors that contribute to shaping the design of and demand for various technologies (e.g., advertising, the strength of the economy, the goals of a company, the latest fads, etc.).

Standard 6: Development and Use of Technology: Examine the roll of society in the development and use of technology.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics & grammar, syntax, diction, & order.

Standard 6: Development and Use of Technology: Examine the roll of society in the development and use of technoloy.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 6: Development and Use of Technology: Examine the roll of society in the development and use of technoloy.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.
8.1.2 Plan a search strategy.
8.1.3 Access information using a variety of sources.
8.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.5 Use organizational strategies to gather, record, and synthesize information.
8.1.6 Present research.
8.2.1 Create media products focused for a variety of audience.
8.2.2 Select appropriate communication formats.
8.2.3 Use a variety of strategies to present media products.
8.2.4 Use a variety of techniques to evaluate the effectiveness of media products.
8.3.1 Use appropriate terminology and concepts associated with media and technology.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.
8.3.4 Use the most effective media and technology for specific needs.
8.3.5 Understand the potential and limitations of existing media and technology.
8.4.1 Collaborate in group projects & learning objectives.
8.4.2 Develop competence in selecting from a variety of reading, listening and viewing formats.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.
8.4.4 Understand different perspectives and the values and beliefs supporting them.
8.5.1 Follow school guidelines for responsible use of technology and information resources.
8.5.2 Use level-appropriate methods to cite & document reference sources.
8.5.3 Demonstrate knowledge of intellectual property rights.
8.5.4 Understand the past, present and future impact of technology on society.
12.1.1 Define a research problem or task.
12.1.2 Plan a research strategy.

12.1.3 Access information using a variety of sources.
12.1.4 Use a variety of criteria toe evaluate and select information for research.
12.1.5 Use organizational strategies to record and synthesize information.
12.1.6 Present research.
12.2.1 Demonstrate awareness of audience when creating media products.
12.2.2 Synthesize information to create a product that meets a specific need.
12.2.3 Use a variety of criteria to evaluate media products.
12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
12.3.1 Explain and use appropriate terminology & concepts associated with media and technology.
12.3.2 Apply strategies for identifying and solving routine hardware and software problems.
12.3.3 Explain features and uses of current and emerging media and technology.
12.3.4 Explain ways in which social and economic forces will be used to influence which technologies will be developed.
12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.
12.4.1 Work cooperative and collaboratively when using media technology.
12.4.2 Develop competence and selectivity in reading, listening, and viewing..
12.4.3 Demonstrate self-motivation in seeking information.
12.4.4 Use a variety of media and technology for personal needs and enjoyment.
12.5.1 Follow school policies for responsible use of information resources.
12.5.2 Demonstrate proper form of citations and bibliographies.
12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 6: Development and Use of Technology: Examine the roll of society in the development and use of technoloy

Academic Cross Walk

Science

6.7.1	Explain how natural hazards affect populations, resources, and the environment (e.g., floods, storms, hurricanes, volcanoes, earthquakes).
6.7.2	Explain how recycling and conservation affect populations, resources, and the environment.
7.6.1	Identify ways in which technology has influenced the course of history & improved the quality of life.
7.6.2	Identify technologies (ex., communication, agriculture, info processing, transportation) that are influenced by societies.
7.7.1	Explain how science affects personal health (ex., injury prevention, immunization, organ transplant, medical scanning devices).
8.7.1	Explain the interaction of science & technology with social issues (e.g., mining, natural disasters).
9-10.5.1	Explain the relationship between the Big Bang Theory and the origin & evolution of the universe.
9-10.5.5	Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards and events (e.g., graph time method to predict earthquakes and tsunamis).

9-10.6.3 Explain how emerging technologies (e.g., genetic manipulation, biofuels, and hydrogen fuels) may impact society & the environment.

11-12.6.2 Identify examples of how new technologies advance science.

11-12.6.3 Explain how designing and implementing technology requires weigh-offs between positive & negative impacts on humans & the environment.

11-12.7.2 Explain ways renewable and nonrenewable resources are managed (e.g., land reclamation, forest management, CRP, hunting, licenses, energy-conserving technologies).

11-12.7.4 Explain how science and technology can influence personal, industrial, and cultural decision-making (ex., organ transplants, cloning, stem cell research, use of genetic profile, archeological discoveries, land management, resource management).

Math

None

Standard 6: Development and Use of Technology: Examine the roll of society in the development and use of technology.

Academic Cross Walk

Social Studies

8.1.3 Understand how key events, people and ideas contributed to United States history.	12.1.4 Understand how key events, people and ideas affected United States history.
8.1.4 Understand how key events, people and ideas contributed to world history.	12.1.5 Understand how key events, people and ideas affected world history.
8.3.3 Know the key features of various kinds of specialized institutions that exist in market economies.	12.3.2 Understand how major economics forces & institutions influence individual decisions of producers, consumers and investors.
8.6.4 Understand how human activity affects the physical environment.	12.3.3 Understand how interdependence affects the global marketplace.
8.7.1 Understand the relationship between socio-economics and culture.	12.7.2 Understand the role of humanities, religion, and beliefs in defining and preserving culture.
8.7.2 Understand how culture influences gender roles, ethics and ideology.	
8.7.3 Understand how culture influences family relationships religion and social institutions.	

Standard 7:   Influence of Technology: Isolate the influences of technology on history.

Student Competencies

Introductory: Grades K-5
7 A   Explore how technology has change the way people live and work.
7 B   Examine the tools that people have made to provide food to make clothing, and to protect themselves.

Core:

Grades 6-8
7 C   Investigate inventions and innovations that have evolved by using slow and methodical processes of tests and refinements.
7 D   Recognize that the specialization of function is at the heart of many technological improvements.
7 E   Understand that the design and construction of structures for service or convenience have evolved from the development of techniques for measurement, controlling systems, and the understanding of spatial relationships.
7 F   Describe how invention or innovation was not always developed with the knowledge of science.

Grades 9-12
7 G   Illustrate a technological development that has been evolutionary or a result of a series of refinements to a basic invention.
7 H   Report how the evolution of civilization has been directly affected by, and has in turn affected, the development and use of tools and materials.
7 I   Summarize how technology has been a powerful force in reshaping the social, cultural, political, and economic landscape.
7 J   Specify the development of tools and machines that was based on technological know-how rather than scientific knowledge.
7 K   Examine how the Iron Age was defined by the use of iron and steel as the primary materials for tools.
7 L   Correlate how the developments of the Middle ages produced long-lasting effects on technology and society.
7 M   Review the important developments of history in technology during the Renaissance.
7 N   Evaluate technological developments of the Industrial Revolution (e.g., continuous manufacturing, sophisticated transportation communication systems, advanced construction practices, improved education, and leisure time, etc.).
7 O   Relate how the Information Age places emphasis on the processing and exchange of information.

Standard 7:   Influence of Technology: Isolate the influences of technology on history.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.
8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 7:   Influence of Technology: Isolate the influences of technology on history.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 7: Influence of Technology: Isolate the influences of technology on history.
Academic Cross Walk

Library/Tech Literacy

8.1.1   Define a research problem or task.
8.1.3   Access information using a variety of sources.
8.1.5   Use organizational strategies together, record and synthesize information.
8.1.6   Present research.
8.1.7   Evaluate the research process.
8.2.1   Create media products focused for a variety of audiences.
8.2.2   Select appropriate communication formats. audiences.
8.2.3   Use a variety of strategies to present media products.
8.2.4   Use a variety of techniques to evaluate the effectiveness of media products.
8.3.1   Use appropriate terminology and concepts associated with media and technology.
8.3.2   Use and refine skills and procedures needed to operate various media and technology.
8.3.4   Use the most effective media and technology for specific needs.
8.3.5   Understand the potential and limitations of existing media and technology.
8.4.1   Collaborate in group projects and learning objectives.
8.4.3   Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.
8.4.4   Understand different perspectives and the values and beliefs supporting them.
8.5.1   Follow school guidelines for responsible use of technology and information resources.
8.5.2   Use level-appropriate methods to cite and document reference sources.
8.5.4   Understand the past, present and future impact of technology on society.

12.1.1   Define a research problem or task.
12.1.3   Access information using a variety of sources.
12.1.5   Use organizational strategies to record and synthesize information.
12.1.6   Present research.
12.2.3   Use a variety of criteria to evaluate media products.
12.2.4   Use a variety of media & technology to communicate with communities beyond the school.
12.3.1   Explain and use appropriate terminology and concepts associated with media and technology.
12.3.2   Apply strategies for identifying and solving routine hardware and software problems.
12.3.4   Explain ways in which social and economic forces influences which technologies will be developed and used.
12.4.1   Work cooperatively and collaboratively when using media and technology.
12.4.3   Demonstrate self-motivation in seeking information.
12.4.4   Use a variety of media and technology for personal needs and enjoyment.
12.5.1   Follow school policies for responsible use of information resources.
12.5.2   Demonstrate proper form of citations and bibliographies.
12.5.5   Understand the impact of equitable access to information in a democracy.

Standard 7: Influence of Technology: Isolate the influences of technology on history.

Academic Cross Walk

Science

6.6.3	Explain the relationship between science and technology.
7.6.1	Identify ways in which technology has influenced the course of history and improved the quality of life.
7.6.2	Identify technologies (e.g., communication, agriculture, information processing, transportation) that are influenced by societies.
7.7.1	Explain how science affects personal health (e.g., injury prevention, immunization, organ transplant, medical scanning devices).
8.7.1	Explain the interaction of science and technology with social issues (e.g., mining, natural disasters).
9-10.5.5	Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards and events (e.g., Gap time method to predict earthquakes and tsunamis).

9-10.6.2	Explain how scientific principles have been used to create common technologies (e.g., household appliances, automotive parts, agricultural equipment, textiles, fabrics, computers, Internet resources, CD-ROMs).
9-10.6.3	Explain how emerging technologies (e.g., genetic manipulation, biofuels, and hydrogen fuels) may impact society and the environment.
11-12.5.3	Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion, run-off) on the environment and society.
11-12.6.2	Identify examples of how new technologies advance science.

Math

None

Standard 7: Influence of Technology: Isolate the influences of technology on history.

Academic Cross Walk

Social Studies

8.1.1 Understand the role of chronology & perspective in describing historical events & periods of history.

8.1.3 Understand how key events, people and ideas contributed to United States history.

8.1.4 Understand how key events, people and ideas contributed to world history.

8.4.1 Use various map forms, tools and technologies to acquire, process and report information related to social studies.

8.4.2 Use primary and secondary sources to gather, interpret and analyze and evaluate information related to social studies.

8.4.3 Use technology to gather, organize, record, interpret & evaluate information related to social studies.

8.5.1 Know the rights and responsibilities of an effective American citizen.

8.5.2 Understand the necessity of citizen participation in the political process.

8.6.1 Understand how to use geographic tools to describe and locate physical features and places.

12.1.1 Understand the role of chronological thinking describing and investigating historical events and time periods.

12.1.4 Understand how key events, people and ideas affected United States history.

12.1.5 Understand how key events, people and ideas affected world history.

12.2.2 Understand the foundation, operations, and structure of the America political system.

12.3.1 Understand the principles and problems of traditional, command, market and mixed economics.

12.3.2 Understand how major economic forces and institutions influence individual decisions of producers, consumers and investors.

12.3.3 Understand how interdependence affects the global marketplace.

12.4.1 Use primary sources to analyze, interpret, evaluate or synthesize information related to social studies.

12.4.2 Interpret and evaluate the credibility of primary and secondary sources.

Standard 8:   Attributes of Design: Explore the attributes of design.

Student Competencies

Introductory: Grades K-5
8 A   Recognize that everyone can design solutions to a problem.
8 B   Understand that design is a creative process.
8 C   Describe the design process as a purposeful method of planning practical solutions to problems.
8 D   Identify factors for design requirements (e.g. desired elements and features of a product or system, the limits that are placed on the design, etc.).

Core:

Grades 6-8

8 E   Illustrate how design as a creative planning process leads to useful products and systems.
8 F   Infer that there is no perfect design.
8 G   Relate how requirements for a design are made up of criteria and constraints.

Grades 9-12
8 H   Practice the steps of a design process (e.g. defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, communicating processes and results, etc.).
8 I   Analyze why design problems are seldom presented in a clearly defined form.
8 J   Check and critique the design to redefine and improve upon it.
8 K   Explore how requirements of a design (e.g. criteria, constraints, and efficiency) sometimes compete with each other.

Standard 8:   Attributes of Design: Explore the attributes of design.

Academic Cross Walk

English Language Arts

7.1.1   Generate and evaluate questions relevant to research topics.

7.1.2   Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.

7.1.3   Question the accuracy and relevance of information.

7.1.4   Organize research information.

7.1.5   Present research findings, including information and evidence from a variety of sources.

7.2.4   Use prior knowledge and experience to aid text comprehension.

7.2.5   Read to be informed, entertained and persuaded.

7.3.6   Incorporate grade-level appropriate vocabulary in writing.

7.3.7   Use criteria to evaluate own and others' writing.

7.3.9   Edit for grammar, mechanics, usage, and spelling.

7.4.2   Use supporting materials for topics development.

7.4.3   Incorporate research into presentations.

7.5.1   Identify existing and developing media.

7.5.2   Construct media messages.

7.5.5   Define plagiarism and its consequences.

7.6.1   Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.

7.6.3   Use grade-appropriate mechanics and usage.

8.1.2   Use a variety of primary and/or secondary sources to access information.

8.2.2   Use prior knowledge and experiences to aid text comprehensive.

8.2.3   Use a variety of strategies to construct meaning from text.

8.3.4   Use free writing and journal writing to develop ideas for writing topics.

8.3.6   Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10   Use feedback and multiple drafts to revise text for specific purposes.

8.3.12   Incorporate a variety of visual aids in publications.

8.4.2   Use supporting materials for topics development.

8.4.3   Speak for different purposes.

8.5.1   Identify existing and developing media.

8.5.2   Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

8.5.6   Define plagiarism and its consequences.

8.6.2   Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.

9.1.1   Choose a broad topic, state the problem or question.

9.1.2   Formulate a preliminary thesis statement.

9.1.3   Cross reference information.

9.1.4   Evaluate relevancy of information.

9.1.5   Organize information from a variety of sources.

9.1.6   Summarize information.

9.1.7   Identify and avoid plagiarism.

9.1.8   Use primary and secondary sources.

9.1.9   Use graphic organizer.

9.2.3   Differentiate between a variety of nonfiction genres.

9.2.6   Demonstrate oral reading fluency.

9.2.7   Access prior knowledge to interpret meaning.

9.2.8   Read for a variety of purposes and intents.

9.2.15   Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.

9.3.1   Write expository text; ex. essays, directions, letters.

9.3.4   Develop a focus for composition; ex., theme.

9.3.5   Organize the ideas and details of a composition according to purpose.

9.3.8   Use supporting details.

9.3.10   Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 8:   Attributes of Design: Explore the attributes of design**.**

Academic Cross Walk

English Language Arts - Cont.

9.3.12 Use technology; ex., publishing software.	11.1.1 Research topics independently using appropriate sources.
9.4.1 Analyze the audience and adjust message and wording to suit purpose.	11.1.2 Evaluate and incorporate information from primary sources.
9.4.4 Engage in a group discussion.	11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
9.4.5 Use critical listening skills; ex., reflection.	
9.5.1 Identify existing and developing media.	11.1.4 Verify the quality, accuracy and usefulness of information.
9.5.2 Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.	11.1.7 Evaluate the research process and develop strategies for improving it.
9.6.2 Use conventions of grammar related to parts of speech.	11.2.6 Apply prior knowledge of contents to interpret meaning of text.
9.6.3 Use conventions of punctuation.	11.2.7 Read for a variety of purposes and intents.
10.1.2 Know ways to effectively search electronic databases.	11.2.10 Use etymology to define words.
10.1.4 Use relevant information.	11.3.5 Use a variety of supporting details.
10.1.5 Organize information from a variety of sources into a unified whole.	11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.	11.4.1 Analyze the audience and adjust message and wording to suit the purpose.
10.1.7 Paraphrase information.	11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
10.1.11 Present research information.	
10.2.1 Summarize information from nonfiction genres.	
10.2.2 Identify techniques used in persuasive writing.	11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
10.2.3 Read for a variety of purposes and intents.	
10.3.3 Use prewriting techniques to generate ideas.	11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.
10.3.7 Use a variety of supporting details.	12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.
10.3.8 Use language appropriate to the format of the composition.	
10.3.9 Use precise language to describe people, places and things.	12.2.2 Critique details, facts, and concepts from nonfiction genres.
10.3.11 Edit and revise compositions with attention to content.	12.2.4 Read for a variety of purposes and intents.
10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.	12.2.8 Use technical language/jargon to decipher meaning.
10.4.1 Analyze the audience and adjust message and wording to suit the purpose.	12.3.3 Organize the ideas and details of a composition according to purpose.
10.4.2 Use appropriate body language in oral presentations.	12.5.1 Identify existing and developing media.
10.5.1 Identifying existing and developing media.	12.5.2 Create a media project for a purpose.
10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.	12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 8:   Attributes of Design: Explore the attributes of design**.**

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task. reference sources.
8.1.3 Access information using a variety of sources.	12.1.3 Access information using a variety of sources.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.6 Present research.	12.1.6 Present research.
8.2.1 Create media products focused for a variety of audiences.	12.2.1 Demonstrate awareness of audience when creating media products.
8.2.2 Select appropriate communication formats.	12.2.2 Synthesize information to create a product that meets a specific need.
8.2.3 Use a variety of strategies to present media products.	12.2.3 Use a variety of criteria and evaluate media products.
8.2.4 Use a variety of techniques to evaluate the effectiveness of media products.	12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.3.4 Use the most effective media and technology for specific needs.	12.3.4 Explain features and uses of current and emerging media and technology.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.5 Explain ways in which social and economic forces influences which technologies will be developed and used.
8.4.1 Collaborate in group projects and learning objectives.	12.4.1 Work cooperatively and collaboratively when using media and technology.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.4.3 Demonstrate self-motivation in seeking information.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.5.1 Follow school policies for responsible use of information resources.
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.5.2 Demonstrate proper form of citations and bibliographies.
8.5.4 Understand the past, present and future impact of technology on society.	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 8:   Attributes of Design: Explore the attributes of design.

Academic Cross Walk

Math	*Science*
7.1.4 Use integers to represent and compare quantities.	7.2.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions).
7.1.7 Add, subtract, multiply and divide fractions and terminating decimals.	8.2.2 Use evidence to generate descriptions, explanations, predictions, and models.
7.4.4 Select and use appropriate tools and units to determine the measurements needed for calculating perimeter, circumference area, surface area, volume.	8.2.3 Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data.
7.4.5 Solve problems involving scale factors, using ratio and proportions.	8.2.4 Design and conduct a scientific investigation (e.g., making systematic observations, making accurate measurements, identifying and controlling variables.
8.1.2 Solve real-world problems involving ratio, proportion and percent.	9-10.2.3 Identify questions and concepts that guide
8.1.7 Add, subtract, multiply, and divide integers.	9-10.2.7 scientific investigations. Maintain clear and accurate records of scientific investigations.
8.1.8 Select and use a computational technique (ex. mental calculations) to solve problems.	11-12.2.2 Select and use appropriate instruments, measuring tools, and units of measure to
9-10.1.9 Select and use a computational technique (ex. mental calculations) to solve problems involving real numbers.	11-12.2.3 improve scientific investigations. Use data from scientific investigations to accept or reject a hypothesis.
9-10.1.11 Add, subtract and perform scalar multiplication on matrices.	11-12.2.7 Design and conduct an independent investigation.
9-10.4.1 Select appropriate units and scales for problem situations involving measurement.	11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators).
9-10.5.2 Express relations and functions using a variety of representations (ex. numeric, graphic).	11-12.6.3 Explain how designing and implementing technology requires weighing trade-offs between positive and negative impacts on humans and the environment.
9-10.5.13 Interpret a graphical representation of a real-world situation.	11-12.7.4 Explain how science and technology can influence personal, industrial, and cultural decision-making (e.g., organ transplants, cloning, stem cell research, genetic manipulation, use of genetic profile, archeological discoveries, land management, resource management).
11-12.1.7 Add, subtract, and multiply complex numbers.	

Standard 8:   Attributes of Design: Explore the attributes of design**.**

Academic Cross Walk

Social Studies

8.3.3 Know the key features of various kinds of specialized institutions that exist in market economics.	8.6.3 Understand how Earth's physical system influences human systems.
8.4.3 Use technology to gather, organize, record, interpret and evaluate information related to social studies.	8.6.5 Understand how geographic methods and tools are used to interpret the past, understand the present, and plan for the future.
8.6.1 Understand how to use geographic tools to describe and locate physical features and places.	12.4.3 Use technology to access, record and analyze information related to social studies.

Standard 9:   Engineering Design: Integrate engineering design.

Student Competencies

Introductory: Grades K-5
9 A   Introduce the engineering design process to identify a problem, look for ideas, develop solutions, and share solutions with others.
9 B   Express ideas to others verbally and through sketches and models as an important part of the design process.
9 C   Apply the engineering design process which involves defining a problem, generating ideas, selecting a solution, testing a solution(s), making the item, evaluating it, and presenting the results.
9 D   Design an object using creativity and considering all ideas.
9 E   Use models to communicate and test design ideas and processes.

Core:

Grades 6-8
9 F   Utilize design processes involving a set of steps, which can be performed in different sequences and repeated as needed.
9 G   Use brainstorming as a group problem-solving design process.
9 H   Transform ideas into practical solutions by modeling, testing, evaluating, and modifying.

Grades 9-12

9 J   Distinguish how engineering design is influenced by personal characteristics (e.g. creativity, resourcefulness, and the ability to visualize and think abstractly.)

Advanced:
9 I   Synthesize design principles to evaluate existing designs, collect data, and guide the design process.
9 K   Create a prototype as a working model used to test a design concept by making actual observations and necessary adjustments.
9 L   Appraise the factors that affect the engineering design process (e.g. safety, reliability, economic, quality control, environmental, ergonomics, etc.).

Standard 9:   Engineering Design: Integrate engineering design.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and
7	spelling.
.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 9:   Engineering Design: Integrate engineering design.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 9:   Engineering Design: Integrate engineering design.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task	12.1.3 Access information using a variety of sources.
8.1.2 Plan a search strategy.	12.1.4 Use a variety of criteria toe evaluate and select information for research.
8.1.3 Access information using a variety of sources.	12.1.5 Use organizational strategies to record and synthesize information.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.6 Present research.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.2.1 Demonstrate awareness of audience when creating media products.
8.1.6 Present research	12.2.2 Synthesize information to create a product that meets a specific need.
8.2.1 Create media products focused for a variety of audiences.	12.2.3 Use a variety of criteria to evaluate media products.
8.2.2 Select appropriate communication formats.	12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
8.2.3 Use a variety of strategies to present media products.	12.3.1 Explain and use appropriate terminology & concepts associated with media and technology.
8.2.4 Use a variety of techniques to evaluate the effectiveness of media products.	12.3.2 Apply strategies for identifying and solving routine hardware and software problems.
8.3.1 Use appropriate terminology and concepts associated with media and technology	12.3.3 Explain features and uses of current and emerging media and technology.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.3.4 Explain ways in which social and economic forces will be used to influence technologies to be developed.
8.3.4 Use the most effective media and technology for specific needs.	12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.
8.3.5 Understand the potential and limitations of existing media and technology.	12.4.1 Work cooperative and collaboratively when using media technology.
8.4.1 Collaborate in group projects and learning objectives.	12.4.2 Develop competence and selectivity in reading, listening, and viewing..
8.4.2 Develop competence in selecting from a variety of reading, listening and viewing formats	12.4.3 Demonstrate self-motivation in seeking information.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.4.4 Use a variety of media and technology for personal needs and enjoyment.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.5.1 Follow school policies for responsible use of information resources.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.5.2 Demonstrate proper form of citations and bibliographies.
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.5.4 Understand the impact of equitable access to information in a democracy.
8.5.3 Demonstrate knowledge of intellectual property rights.	
8.5.4 Understand the past, present and future impact of technology on society.	
12.1.1 Define a research problem or task.	
12.1.2 Plan a research strategy.	

Standard 9:   Engineering Design: Integrate engineering design.

Academic Cross Walk

Math

7.1.10	Use proportions to solve problems.
7.2.1	Make observations about relationships between two- and three-dimensional figures, e.g., a cube is made with six squares.
7.2.6	Build and sketch three-dimensional solids, e.g., using nets, manipulative.
7.4.5	Solve problems involving scale factors, using ratio and proportion.
8.1.2	Solve real-world problems involving ratio, proportion, and percent.
8.2.8	Use two-dimensional representations of three-dimensional objects to visualize and solve problems, e.g., those involving surface area and volume.
9-10.2.3	Use trigonometric relationships and the Pythagorean Theorem to determine side lengths and angle measures in right triangles.
9-10.2.10	Recognize images of the same object shown from different perspectives, i.e., a two-dimensional image of a three-dimensional object.
9-10.2.11	Use geometric models to find solutions to problems in mathematics and other disciplines, e.g., art and architecture.
9-10.4.1	Recognize images of the same object shown from different perspectives, i.e., a two-dimensional image of a three-dimensional object.
9-10.5.13	Interpret a graphical representation of a real-world situation.
11-12.2.1	Use trigonometric relationships to determine side lengths and angle measures in triangles, i.e., right triangle trigonometry, Law of Sines, and Law of Cosines.

Social Studies

8.4.1	Use various map forms, tools, technologies to acquire, process and report information related to social studies.
8.4.2	Use primary and secondary sources to gather, interpret, analyze, and evaluate information related to social studies.
8.4.3	Use technology to gather, organize, record, interpret, and evaluate information related to social studies.
8.6.4	Understand how human activity affects the physical environment.
12.1.4	Understand how key events, people, and ideas affected United States History.
12.1.5	Understand how key events, people, and ideas affected world history.
12.2.2	Understand the foundations, operations, and structures of the American political system.
12.3.1	Understand the principles and problems of traditional, command, market, and mixed economies.
12.3.2	Understand how major economic forces and institutions influence individual decisions of producers, consumers, and investors.
12.3.3	Understand how interdependence affects the global marketplace.
12.4.1	Use primary sources to analyze, interpret, evaluate, or synthesize information related to social studies.
12.4.2	Interpret and evaluate the credibility of primary and secondary sources.
12.4.3	Use technology to access, record, and analyze information related to social studies.
12.5.1	Understand the benefits and challenges of the rights of citizenship.
12.5.2	Understand the responsibilities of citizenship and the components of civic participation.
12.6.2	Understand the interactions of geography and the physical and human environment.
12.7.2	Understand the role of the humanities, religion, and beliefs in defining and preserving culture.

Standard 9:   Engineering Design: Integrate engineering design.

Academic Cross Walk

Science

7.2.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions).	9-10.6.2 Explain how scientific principles have been used to create common technologies (e.g., household appliances, automotive parts, agricultural equipment, textiles, fabrics, computers, Internet, resources, CD-ROMs).
7.6.1 Identify ways in which technology has influenced the course of history and improved the quality of life.	9-10.6.3 Explain how emerging technologies (e.g., genetic manipulation, biofuels, and hydrogen fuels) may impact society and the environment.
8.2.3 Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data.	11-12.2.1 Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.
8.2.4 Design and conduct a scientific investigation (e.g., making systematic observations, making accurate measurements, identifying and controlling variables).	11-12.2.2 Select and use appropriate instruments, measuring tools, and units of measure to improve scientific investigations.
8.7.1 Explain the interaction of science and technology with social issues (e.g., mining, natural disasters).	11-12.5.3 Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion, run-off) on the environment and society.
9-10.2.1 Explain how scientific investigations can result in new ideas.	11-12.6.3 Explain how designing and implementing technology requires weighing trade-offs between positive and negative impacts on humans and the environment.
9-10.2.3 Identify questions and concepts that guide scientific investigations.	11-12.7.4 Explain how science and technology can influence personal, industrial, and cultural decision-making (e.g., organ transplants, cloning, stem cell research, genetic manipulation, use of genetic profile, archeological discovers, land management, resource management.
9-10.2.7 Maintain clear and accurate records of scientific investigations.	
9-10.5.5 Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards and events (e.g., Gap time method to predict earthquakes and tsunamis).	
9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills).	

Standard 10: Problem Solving: Translate the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

Student Competencies

Introductory: Grades K-5

10 A   Ask questions and make observations to help a person to figure out how things work.

10 B   Relate how all products and systems are subject to failure—some may be fixable.

10 C   Troubleshoot why something does not work.

10 D   Apply invention and innovation as creative ways to turn ideas into real things.

10 E   Use experimentation to solve technological problems.

Core:

Grades 6-8

10 F   Identify a malfunction in a technological system by using troubleshooting as a problem-solving method.

10 G   Differentiate between invention and innovation.

10 H   Solve technological problems through experimentation.

Grades 9-12

10 I   Incorporate research and development as a specific problem-solving approach.

10 J   Research solutions to technological problems.

10 K   Realize that all problems are not technological and not every problem can be solved using technology.

10 L   Apply a multidisciplinary approach to solve technological problems.

Standard 10:   Problem Solving: Translate the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 10:   Problem Solving: Translate the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 10:   Problem Solving: Translate the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

Academic Cross Walk

Library/Tech Literacy

8.1.1   Define a research problem or task
8.1.2   Plan a search strategy.
8.1.3   Access information using a variety of sources.
8.1.4   Use a variety of criteria to evaluate and select information for research.
8.1.5   Use organizational strategies to gather, record, and synthesize information.
8.1.6   Present research.
8.2.1   Create media products focused for a variety of audience.
8.2.2   Select appropriate communication formats.
8.2.3   Use a variety of strategies to present media products.
8.3.1   Use appropriate terminology and concepts associated with media and technology.
8.3.2   Use and refine skills and procedures needed to operate various media and technology.
8.3.4   Use the most effective media and technology for specific needs.
8.3.5   Understand the potential and limitations of existing media technology.
8.4.1   Collaborate in group projects and learning objectives.
8.4.2   Develop competence in selecting from a variety of reading, listening and viewing formats.
8.4.3   Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.
8.5.1   Follow school guidelines for responsible use of technology and information resources.
8.5.2   Use level-appropriate methods to cite and document reference sources.
8.5.4   Understand the past, present and future impact of technology on society.
12.1.1 Define a research problem or task.
12.1.2 Plan a research strategy.
12.1.3 Access information using a variety of sources.
12.1.4 Use a variety of criteria to evaluate and select information for research.

12.1.5 Use organizational strategies to record and synthesize information.
12.1.6 Present research.
12.1.7 Evaluate the research process.
12.2.1 Demonstrate awareness of audience when creating media products.
12.2.2 Synthesize information to create a product that meets a specific need.
12.2.3 Use a variety of criteria to evaluate media products.
12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
12.3.2 Apply strategies for identifying and solving routine hardware and software problems.
12.3.3 Explain features and uses of current and emerging media and technology.
12.3.4 Explain ways in which social and economic forces will be used to influence which technologies will be developed.
12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.
12.4.1 Work cooperative and collaboratively when using media technology.
12.4.2 Develop competence and selectivity in reading, listening, and viewing.
12.4.3 Demonstrate self-motivation in seeking information.
12.5.1 Follow school policies for responsible use of information resources.
12.5.2 Demonstrate proper form of citations and bibliographies.
12.5.3 Understand and obey intellectual property laws, including copyright, when using information format.
12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 10: Problem Solving: Translate the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

Academic Cross Walk

Math

7.1.1	Use ratios and proportions to represent relationships.
7.1.4	Use integers to represent and compare quantities.
7.1.8	Solve real-world problems using integers, fractions, decimals, and percents.
7.3.1	Formulate a question; collect, organize, and display data using a bar, line, and circle graph.
7.5.1	Create tables and graphs to analyze and describe patterns.
8.1.2	Solve real-world problems involving ratio, proportion, and percent.
8.1.8	Select and use a computational technique (e.g., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers.
9-10.1.4	Represent a set of data in a matrix.
9-10.1.9	Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers.
9-10.3.1	Construct appropriate displays of given data; (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots).
9-10.3.2	Interpret a given visual representation (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots) of a set of data.
9-10.5.2	Express relations and functions using a variety of representations; (i.e., numeric, graphic, symbolic, and verbal).
9-10.5.13	Interpret a graphical representation of a real-world situation.
9-10.5.14	Draw conclusions about a situation being modeled.
9-10.5.15	Approximate and interpret rates of change from graphical and numerical data.
11-12.3.1	Choose, construct, and interpret a display to represent a set of data.

Science

9-10.2.1	Explain how scientific investigations can result in new ideas.
11-12.2.1	Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.
11-12.6.2	Identify examples of how new technologies advance science.
11-12.6.3	Explain how designing and implementing technology requires weighing trade-offs between positive and negative impacts on humans and the environment.

Social Studies

8.4.1	Use various map forms, tools, and technologies to acquire, process and report information related to social studies.
8.4.2	Use primary and secondary sources to gather, interpret, analyze, and evaluate information related to social studies.
8.4.3	Use technology to gather, organize, record, interpret, and evaluate information related to Social Studies.
12.4.3	Use technology to access, record, and analyze information related to Social Studies.

Standard 11: Application of the Design Process: Implement the design process.

Student Competencies

Introductory: Grades K-5

11 A   Brainstorm people's needs and wants and pick some problems that can be solved through the design process.

11 B   Build or construct an object using the design process.

11 C   Investigate how things are made and how they can be improved.

11 D   Identify and collect information about everyday problems that can be solved by technology, and generate and requirements for solving a problem.

1 E   Present possible solutions in visual form and select the best solution(s) from many.

11 F   Test and evaluate the solutions for the design problems.

11 G   Improve design solutions.

Core:

Grades 6-8

11 H   Apply a design process to solve problems in and beyond the laboratory-classroom.

11 I   Specify criteria and constraints for the design.

11 J   Make two-dimensional and three-dimensional representations of the designed solution.

11 K   Test and evaluate the design in relation to preestablished requirements (e.g. criteria, constraints, refine, etc.).

11 L   Make a product or system and document the solution.

Grades 9-12

11 M   Recommend a design problem to solve and decide whether or not to address it.

11 O   Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of the final product.

11 Q   Develop and produce a product or system using a design process.

Advanced:

11 N   Identify criteria and constraints and determine how these will affect the design process.

11 P   Evaluate the design solution using conceptual, physical, and mathematical models at various intervals of the design process in order to check of proper design and to note areas where improvements are needed.

11 R   Evaluate final solutions and communicate observations, processes and results of the entire design process, using verbal, graphic, quantitative, virtual and written means, in addition to three-dimensional models.

Standard 11:   Application of the Design Process: Implement the design proces**s.**

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.
8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.
9.3.12	Use technology; ex., publishing software.

Standard 11:   Application of the Design Process: Implement the design proces**s.**

Academic Cross Walk

English Language Arts - Cont.

9.4.1   Analyze the audience and adjust message and wording to suit purpose.

9.4.4   Engage in a group discussion.

9.4.5   Use critical listening skills; ex., reflection.

9.5.1   Identify existing and developing media.

9.5.2   Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

9.6.2   Use conventions of grammar related to parts of speech.

9.6.3   Use conventions of punctuation.

10.1.2 Know ways to effectively search electronic databases.

10.1.4 Use relevant information.

10.1.5 Organize information from a variety of sources into a unified whole.

10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.

10.1.7 Paraphrase information.

10.1.11 Present research information.

10.2.1 Summarize information from nonfiction genres.

10.2.2 Identify techniques used in persuasive writing.

10.2.3 Read for a variety of purposes and intents.

10.3.3 Use prewriting techniques to generate ideas.

10.3.7 Use a variety of supporting details.

10.3.8 Use language appropriate to the format of the composition.

10.3.9 Use precise language to describe people, places and things.

10.3.11 Edit and revise compositions with attention to content.

10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.

10.4.1 Analyze the audience and adjust message and wording to suit the purpose.

10.4.2 Use appropriate body language in oral presentations.

10.5.1 Identifying existing and developing media.

10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1 Research topics independently using appropriate sources.

11.1.2 Evaluate and incorporate information from primary sources.

11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.

11.1.4 Verify the quality, accuracy and usefulness of information.

11.1.7 Evaluate the research process and develop strategies for improving it.

11.2.6 Apply prior knowledge of contents to interpret meaning of text.

11.2.7 Read for a variety of purposes and intents.

11.2.10 Use etymology to define words.

11.3.5 Use a variety of supporting details.

11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.

11.4.1 Analyze the audience and adjust message and wording to suit the purpose.

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.

11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.

12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.

12.2.2 Critique details, facts, and concepts from nonfiction genres.

12.2.4 Read for a variety of purposes and intents.

12.2.8 Use technical language/jargon to decipher meaning.

12.3.3 Organize the ideas and details of a composition according to purpose.

12.5.1 Identify existing and developing media.

12.5.2 Create a media project for a purpose.

12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 11:   Application of the Design Process: Implement the design proces**s.**

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.2 Plan a research strategy.	12.1.2 Plan a research strategy.
8.1.3 Access information using a variety of sources.	12.1.3 Access information using a variety of sources.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.4 Use a variety of criteria toe evaluate and select information for research.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.1.5 Use organizational strategies to record and synthesize information.
8.1.7 Evaluate the research process.	12.1.6 Present research.
8.2.1 Create media products focused for a variety of audience.	12.2.1 Demonstrate awareness of audience when creating media products.
8.2.2 Select appropriate communication formats.	12.2.2 Synthesize information to create a product that meets a specific need.
8.2.3 Use a variety of strategies to present media products.	12.2.3 Use a variety of criteria to evaluate media products.
8.2.4 Use a variety of techniques to evaluate the effectiveness of media products.	12.2.4 Use a variety of media and technology to communicate with communities beyond the school.
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.3.1 Explain and use appropriate terminology and .
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology., hardware and software problems.
8.3.3 Develop troubleshooting strategies to solve. technical problems.	12.3.4 Explain features and uses of current and emerging media and technology.
8.3.4 Use the most effective media and technology for specific needs.	12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.
8.3.5 Understand the potential and limitations of existing media and technology.	12.4.1 Work cooperatively and collaboratively when using media technology.
8.4.1 Collaborate in group projects and learning objectives.	12.4.2 Develop competence and selectivity in reading, listening, and viewing.
8.4.1 Collaborate in group projects and learning objectives.	12.4.3 Demonstrate self-motivation in seeking information.
8.4.2 Develop competence in selecting from a variety of reading, listening and viewing formats.	12.4.4 Use a variety of media and technology for personal needs and enjoyment.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.5.1 Follow school policies for responsible use of information resources.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.5.2 Demonstrate proper form of citations and bibliographies.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.5.3 Understand and obey intellectual property laws, including copyright, when using information in any format.
8.5.2 Use level-appropriate methods to cite and document reference sources.	
8.5.3 Demonstrate knowledge of intellectual property rights.	
8.5.4 Understand the past, present and future impact of technology on society.	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 11:   Application of the Design Process: Implement the design process.

Academic Cross Walk

Math

7.4.2	Convert unit measurements within the same system (metric and standard) when solving problems.
7.4.5	Solve problems involving scale factors, using ratio and proportion.
7.5.6	Graph change over time; (e.g., growth distance, population).
8.1.2	Solve real-world problems involving ratio, proportion, and percent.
8.2.8	Use two-dimensional representations of three-dimensional objects to visualize and solve problems; (e.g., those involving surface area and volume).
8.4.1	Select an appropriate degree of precision when using measurements for calculations.
9-10.1.8	Apply estimation skills to predict realistic solutions to problems.
9-10.1.9	.Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers.
9-10.2.10	Recognize images of the same object show from different perspectives ;(i.e., a two-dimensional image of a three-dimensional object).
9-10.2.11	Use geometric models to find solutions to problems in mathematics and other disciplines; (e.g., art and architecture).
9-10.3.1	Construct appropriate displays of given data; (i.e., circle, graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots).
9-10.5.13	Interpret a graphical representation of a real-world situation.
9-10.5.14	Draw conclusions about a situation being modeled.

Social Studies

8.3.3	Know the key features of various kinds of specialized institutions that exist in market economics.
8.4.3	Use technology to gather, organize, record, interpret, and evaluate information related to social studies.
8.6.3	Understand how Earth's physical system influences human systems.
8.6.4	Understand how human activity affects the physical environment.
8.7.2	Understand how culture influences gender roles, ethics, ideology.
8.7.3	Understand how culture influences family relationships, religion, and social institutions.
12.2.2	Understand the structures and purposes of governments.
12.3.2	Understand how major economic forces and institutions influence individual decisions of producers, consumers, and investors.
12.3.3	Understand how interdependence affects the global marketplace.
12.4.1	Use primary sources to analyze, interpret, evaluate, or synthesize information related to social studies.
12.4.2	Interpret and evaluate the credibility of primary and secondary sources.
12.4.3	Use technology to access, record, and analyze information related to social studies.
12.6.2	Understand the interactions of geography and the physical and human environment.
12.6.3	Know the characteristics and uses of geographic tools and use these tools to organize and communicate information

Standard 11:   Application of the Design Process: Implement the design process.

Academic Cross Walk

Science

7.2.1	Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions).
8.2.2	Use evidence to generate descriptions, explanations, predictions, and models.
8.2.3	Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data.
8.2.4	Design and conduct a scientific investigation (e.g., making systematic observations, making accurate measurements, identifying and controlling variables.
9-10.1.3	Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population. technology requires weighing trade-offs between positive and negative impacts on humans and the environment.
9-10.2.1	Explain how scientific investigations can result in new ideas.
9-10.2.2	Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station).
9-10.2.3	Identify questions and concepts that guide scientific investigations
9-10.2.4	Formulate a testable hypothesis for a simple investigation.
9-10.2.5	Identify the independent and dependent variables, the control, and the constants when conducting an experiment.
9-10.2.6	Design and conduct a guided investigation.
9-10.2.7	Maintain clear and accurate records of scientific investigations.
9-10.5.5	Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards and events (e.g., Gap time method to predict earthquakes and tsunamis).
9-10.6.1	Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills).
11-12.2.1	Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.
11-12.2.2	Select and use appropriate instruments, measuring tools, and units of measure to improve scientific investigations.
11-12.2.3	Use data from scientific investigations to accept or reject a hypothesis.
11-12.2.7	Design and conduct an independent investigation. Select and use appropriate technologies,
11-12.6.1	Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators).
11-12.6.3	Explain how designing and implementing technology requires weighing trade-offs between positive and negative impacts on humans and the environment.
11-12.7.2	Explain ways renewable and nonrenewable resources are managed (e.g., land reclamation, forest management, CRP, hunting licenses, energy-conserving technologies).

Standard 12: Technological Products and Systems: Use and maintain technological products and systems.

Student Competencies

Introductory: Graded K-5
12 A   Discover how things work.
12 B   Use hand tools correctly and safely and be able to   name them correctly.
12 C   Recognize and use everyday symbols.
12 D   Follow step-by-step directions to assemble a   product.
12 E   Select and safely use tools, products, and systems   for specific tasks.
12 F   Operate computers to access and organize   information.
12 G   Incorporate common symbols (e.g. numbers and   words to communicate key ideas, etc.)

Core:

Grades 6-8
12 H   Utilize information provided in manuals, protocols, or by experienced people to see and understand how things work.
12 I   Practice using tools, materials, and machines safely to diagnose, adjust, and repair systems.
12 J   Incorporate computers and calculators in various applications.
12 K   Maintain and operate systems in order to achieve a given purpose.

Grades 9-12
12 L   Document processes and procedures and communicate them to different audiences using   appropriate oral and written techniques.
12 M   Diagnose a system that is malfunctioning and use   tools, materials, machines, and knowledge to repair it.
12 O   Operate systems to function as designed.

Advanced:
12 N   Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision.
12 P   Access, collect, retrieve, organize, process, maintain, interpret, and evaluate data in order to communicate (e.g. using computers, calculators, etc.)

Standard 12: Technological Products and Systems: Use and maintain technological products and systems**.**

Academic Cross Walk

English Language Arts

7.1.1 Generate and evaluate questions relevant to research topics.	8.3.6 Use prewriting product to create a first draft emphasizing details and referencing sources.
7.1.2 Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.	8.3.10 Use feedback and multiple drafts to revise text for specific purposes.
7.1.3 Question the accuracy and relevance of information.	8.3.12 Incorporate a variety of visual aids in publications.
7.1.4 Organize research information.	8.4.2 Use supporting materials for topics development.
7.1.5 Present research findings, including information and evidence from a variety of sources.	8.4.3 Speak for different purposes.

7.1.1 Generate and evaluate questions relevant to research topics.
7.1.2 Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3 Question the accuracy and relevance of information.
7.1.4 Organize research information.
7.1.5 Present research findings, including information and evidence from a variety of sources.
7.2.4 Use prior knowledge and experience to aid text comprehension.
7.2.5 Read to be informed, entertained and
7.3.6 persuaded.
7.3.7 Incorporate grade-level appropriate vocabulary in writing.
7.3.9 Use criteria to evaluate own and others' writing.
7.4.2 Edit for grammar, mechanics, usage, and spelling.
7.4.3 Use supporting materials for topics development.
7.5.1 Incorporate research into presentations.
7.5.2 Identify existing and developing media.
7.5.5 Construct media messages.
7.6.1 Define plagiarism and its consequences. Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3 Use grade-appropriate mechanics and usage.
8.1.2 Use a variety of primary and/or secondary sources to access information.
8.2.2 Use prior knowledge and experiences to aid text comprehensive.
8.2.3 Use a variety of strategies to construct meaning from text.
8.3.4 Use free writing and journal writing to develop ideas for writing topics.

8.3.6 Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10 Use feedback and multiple drafts to revise text for specific purposes.
8.3.12 Incorporate a variety of visual aids in publications.
8.4.2 Use supporting materials for topics development.
8.4.3 Speak for different purposes.
8.5.1 Identify existing and developing media.
8.5.2 Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6 Define plagiarism and its consequences.
8.6.2 Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1 Choose a broad topic, state the problem or question.
9.1.2 Formulate a preliminary thesis statement.
9.1.3 Cross reference information.
9.1.4 Evaluate relevancy of information.
9.1.5 Organize information from a variety of sources.
9.1.6 Summarize information.
9.1.7 Identify and avoid plagiarism.
9.1.8 Use primary and secondary sources.
9.1.9 Use graphic organizer.
9.2.3 Differentiate between a variety of nonfiction genres.
9.2.6 Demonstrate oral reading fluency.
9.2.7 Access prior knowledge to interpret meaning.
9.2.8 Read for a variety of purposes and intents.
9.2.15 Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1 Write expository text; ex. essays, directions, letters.
9.3.4 Develop a focus for composition; ex., theme.
9.3.5 Organize the ideas and details of a composition according to purpose.
9.3.8 Use supporting details.
9.3.10 Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 12: Technological Products and Systems: Use and maintain technological products and systems**.**

Academic Cross Walk

English Language Arts - Cont.

9.3.12 Use technology; ex., publishing software.
9.4.1 Analyze the audience and adjust message and wording to suit purpose.
9.4.4 Engage in a group discussion.
9.4.5 Use critical listening skills; ex., reflection.
9.5.1 Identify existing and developing media.
9.5.2 Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2 Use conventions of grammar related to parts of speech.
9.6.3 Use conventions of punctuation.
10.1.2 Know ways to effectively search electronic databases.
10.1.4 Use relevant information.
10.1.5 Organize information from a variety of sources into a unified whole.
10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7 Paraphrase information.
10.1.11 Present research information.
10.2.1 Summarize information from nonfiction genres.
10.2.2 Identify techniques used in persuasive writing.
10.2.3 Read for a variety of purposes and intents.
10.3.3 Use prewriting techniques to generate ideas.
10.3.7 Use a variety of supporting details.
10.3.8 Use language appropriate to the format of the composition.
10.3.9 Use precise language to describe people, places and things.
10.3.11 Edit and revise compositions with attention to content.
10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1 Analyze the audience and adjust message and wording to suit the purpose.
10.4.2 Use appropriate body language in oral presentations.
10.5.1 Identifying existing and developing media.
10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1 Research topics independently using appropriate sources.
11.1.2 Evaluate and incorporate information from primary sources.
11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4 Verify the quality, accuracy and usefulness of information.
11.1.7 Evaluate the research process and develop strategies for improving it.
11.2.6 Apply prior knowledge of contents to interpret meaning of text.
11.2.7 Read for a variety of purposes and intents.
11.2.10 Use etymology to define words.
11.3.5 Use a variety of supporting details.
11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1 Analyze the audience and adjust message and wording to suit the purpose.
11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2 Critique details, facts, and concepts from nonfiction genres.
12.2.4 Read for a variety of purposes and intents.
12.2.8 Use technical language/jargon to decipher meaning.
12.3.3 Organize the ideas and details of a composition according to purpose.
12.5.1 Identify existing and developing media.
12.5.2 Create a media project for a purpose.
12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 12: Technological Products and Systems: Use and maintain technological products and systems**.**

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.5 Use organizational strategies to record and synthesize information.
8.1.3 Access information using a variety of sources.	12.1.6 Present research.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.7 Evaluate the research process.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.2.1 Demonstrate awareness of audience when creating media products.
8.2.1 Create media products focused for a variety of audiences.	12.2.2 Synthesize information to create a product that
8.2.2 Select appropriate communication formats.	12.2.3 Meets a specific need. Use a variety of criteria to evaluate media
8.2.3 Use a variety of strategies to present media products.	12.2.4 products. Use a variety of media and technology to communicate with communities beyond the school.
8.2.4 Use a variety of techniques to evaluate the effectiveness of media products.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.3.3 Apply strategies for identifying and solving routine hardware and software problems.
8.3.3 Develop troubleshooting strategies to solve technical problems.	12.3.4 Explain features and uses of current and emerging media and technology.
8.3.4 Use the most effective media and technology for specific needs.	12.3.5 Explain ways in which social and economic forces influence which technologies will be developed
8.3.5 Understand the potential and limitations of existing media and technology.	12.4.1 and used. Work cooperatively and collaboratively when
8.4.1 Collaborate in group projects and learning objectives.	12.4.2 using media and technology. Develop competence and selectivity in reading, listening, and viewing.
8.4.2 Develop competence in selecting from a variety of reading, listening, and viewing formats.	12.4.3 Demonstrate self-motivation in seeking information.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.4.4 Use a variety of media and technology for personal needs and enjoyment.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.5.1 Follow school policies for responsible use of information resources.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.5.2 Demonstrate proper form of citations and bibliographies.
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.5.3 Understand and obey intellectual property laws, including copyright, when using information in any format.
8.5.4 Understand the past, present, and future impact of technology on society.	12.5.4 Understand the impact of equitable access to information in a democracy.
12.1.1 Define a research problem or task.	
12.1.2 Plan a research strategy.	
12.1.3 Access information using a variety of sources.	
12.1.4 Use a variety of criteria to evaluate and select Information for research.	

Standard 12: Technological Products and Systems: Use and maintain technological products and systems**.**

Academic Cross Walk

Math

7.1.8	Solve-real world problems using integers, fractions, decimals, and percents.
7.3.1	Formulate a question; collect, organize, and display data using a bar, line, and circle graph.
7.4.2	Convert unit measurements within the same system (metric and standard) when solving problems.
8.1.8	Select and use a computational technique (e.g., mental calculations, paper-and-pencil, technology) to solve problems.
8.4.2	Compare unit measurements between systems; e.g., a yard is almost a meter.
9-10.1.4	Represent a set of data in a matrix.
9-10.3.1	Construct appropriate displays of given data; i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.

9-10.3.2	Interpret a given visual representation (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots) of a set of data.
9-10.5.2	Express relations and functions using a variety of representations; i.e., numeric, graphic, symbolic and verbal.
9-10.5.13	Interpret a graphical representation of a real-world situation.
9-10.5.15	Approximate and interpret rates of change from graphical and numerical data.
11-12.3.1	Choose, construct, and interpret a display to represent a set of data.

Science

7.2.1	Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions).
8.2.2	Use evidence to generate descriptions, explanations, predictions, and models.
8.2.3	Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data.
9-10.2.1	Explain how scientific investigations can result in new ideas.
9-10.2.7	Maintain clear and accurate records of scientific investigations.
11-12.2.1	Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.

Social Studies

8.1.4	Understand how key events, people, and ideas contributed to world history.
8.4.3	Use technology to gather, organize, record, interpret, and evaluate information related
8.6.3	to social studies. Understand how Earth's physical system
8.6.5	influences human systems. Understand how geographic methods and tools are used to interpret the past,
12.4.3	understand the present, and plan for the future. Use technology to access, record, and analyze information related to social studies.
12.6.3	Know the characteristics and uses of geographic tools and use these tools to organize and communicate information.

Standard 13: Impacts of Products and Systems: Assess the impact of products and systems.

Student Competencies

Introductory: Grades K-5

13 A   Collect information about everyday products and systems by asking questions.
13 B   Determine if the human use of a product or system creates positive or negative results.
13 C   Compare, contract, and classify collected information in order to identify patterns.
13 D   Investigate and assess the influence of a specific technology on the individual family, community, and environment.
13 E   Examine the trade-offs of using a product or system and decide when it could be used.

Core:

Grades 6-8:

13 F   Design and use instruments (chart, spreadsheet, graph, etc.) to gather data.
13 G   Use data collected to analyze and interpret trends in order to identify the positive or negative effects of a technology.
13 H   Identify trends and monitor the potential consequences of technological development.

Grades 9-12

13 J   Collect information and evaluate quality.
13 L   Use assessment techniques to make decisions about the future development of technology.

Advanced:

13 I   Interpret and evaluate the accuracy of the information obtained and determine if it is useful.
13 K   Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment.
13 M   Design forecasting techniques to evaluate the results of altering natural systems.

Standard 13:   Impacts of Products and Systems: Assess the impact of products and systems.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics & grammar, syntax, diction, & order.

Standard 13:   Impacts of Products and Systems: Assess the impact of products and systems.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 13:   Impacts of Products and Systems: Assess the impact of products and systems.

Academic Cross Walk

Library/Tech Literacy

8.1.1   Define a research problem or task.

8.1.3   Access information using a variety of sources.

8.1.4   Use a variety of criteria to evaluate and select information for research.

8.1.5   Use organizational strategies to gather, record, and synthesize information.

8.1.6   Present research.

8.2.1   Create media products focuses for a variety of audiences.

8.2.2   Select appropriate communication formats.

8.2.3   Use a variety of strategies to present media products.

8.2.4   Use a variety of techniques to evaluate the effectiveness of media products.

8.3.1   Use appropriate terminology and concepts associated with media and technology.

8.3.2   Use and refine skills and procedures needed to operate various media and technology.

8.3.3   Develop troubleshooting strategies to solve technical problems.

8.4.1   Collaborate in group projects & learning objectives.

8.4.3   Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interest.

8.4.4   Understand different perspectives and the values and beliefs supporting them.

8.5.1   Follow school guidelines for responsible use of technology and information resources.

8.5.2   Use level-appropriate methods to cite and document reference sources.

8.5.4   Understand the past, present, and future impact of technology on society.

12.1.1   Define a research problem or task.

12.1.3   Access information using a variety of sources.

12.1.4   Use a variety of criteria to evaluate and select information for research.

12.1.5   Use organizational strategies to record and synthesize information.

12.1.6   Present research.

12.2.1   Demonstrate awareness of audience when creating media and products.

12.2.2   Synthesize information to create a product that meets a specific need.

12.2.3   Use a variety of criteria to evaluate media products.

12.2.4   Use a variety of media and technology to communicate with communities beyond the school.

12.3.1   Explain and use appropriate terminology and concepts associated with media and technology.

12.3.2   Demonstrate advanced knowledge and skills in various media and technology.

12.3.3   Apply strategies for identifying and solving routine hardware and software problems.

12.4.1   Work cooperatively and collaboratively when using media and technology.

12.4.3   Demonstrate self-motivation in seeking information.

12.4.4   Use a variety of media and technology for personal needs and enjoyment.

12.5.1   Follow school policies for responsible use of information resources.

12.5.2   Demonstrate proper form of citations and bibliographies.

12.5.4   Understand the impact of equitable access to information in a democracy.

Standard 13:   Impacts of Products and Systems: Assess the impact of products and systems.

Academic Cross Walk

Math

7.1.1	Use ratios and proportions to represent relationships.
7.1.4	Use integers to represent and compare quantities.
7.3.1	Formulate a question; collect, organize, and display data using a bar, line, and circle graph.
7.4.3	Select the appropriate measure of perimeter, area, surface area, or volume to solve a problem.
7.4.4	Select and use appropriate tools and units to determine the measurements needed for calculating perimeter, circumference, area, surface area, and volume.
7.5.1	Create tables and graphs to analyze and describe patterns.
7.5.6	Graph change over time; e.g., growth, distance, population.
8.1.8	Select and use a computational technique (e.g., mental calculation, paper-and-pencil technology) to solve problems.
8.2.8	Use two-dimensional representations of three-dimensional objects to visualize and solve problems; e.g., those involving surface area and volume.
9-10.1.4	Represent a set of data in a matrix.
9-10.1.8	Apply estimation skills to predict realistic solutions to problems.
9-10.2.3	Use trigonometric relationships and the Pythagorean Theorem to determine side lengths and angle measures in right triangles.
9-10.3.1	Construct appropriate displays of given data; i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.
9-10.3.2	Interpret a given visual representation (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots) of a set of data.
9-10.5.3	Determine whether a relation is a function by examining various representations of the relation; e.g., table, graph, equation, set of ordered pairs.
9-10.5.13	Interpret a graphical representation of a real-world situation.
9-10.5.15	Approximate and interpret rates of change from graphical and numerical data.
11-12.3.1	Choose, construct, and interpret a display to represent a set of data

Science

7.2.1	Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, presentations)
8.2.2	Use evidence to generate descriptions, explanations, predictions, and models.
8.2.3	Use basic mathematics and statistics (e.g., measurements, identifying and controlling variables).
9-10.2.1	Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station).
9-10.2.2	Identify questions and concepts that guide scientific investigations.
9-10.2.4	Identify the independent and dependent variables, the control, and the constants when conducting an experiment.
9-10.2.5	Design and conduct a guide investigation.
9-10.2.6	Maintain clear and accurate records of scientific investigations.
9-10.2.7	Analyze data found in tables, charts & graphs to formulate conclusions.
9-10.2.8	Understand that scientific investigations sometimes result in new ideas.

Standard 13:   Impacts of Products and Systems: Assess the impact of products and systems.

Academic Cross Walk

Science - Cont.

11-12.2.1	Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station).	11-12.2.3	Design and conduct an independent investigation.
11-12.2.2	Select and use appropriate instruments, measuring tools and units of measure to improve scientific investigations. Use data from scientific investigations in order to accept or reject a hypothesis	11-12.2.7	Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer assisted tools, Internet, research skills, CBL, graphing calculators).
		11-12.6.1	Explain how designing and implementing technology requires weighing trade-offs
		11-12.6.3	between positive and negative impacts on humans and the environment.

Social Studies

8.1.1	Understand the role of chronology and perspective in describing historical events and periods of history.	8.6.4	Understand how human activities affects the physical environment.
8.2.4	Understand the structure, function, purpose & role of the local, state, tribal and federal government.	8.7.1	Understand the relationships between socio-economics and culture.
8.3.3	Know the key features of various kinds of specialized institutions that exist in market economics.	8.7.2	Understand how culture influences gender, roles, ethics, and ideology.
8.4.1	Use various map forms, tools and technologies to acquire, process and report information related to social studies.	12.1.1	Understand the role of chronological thinking in describing and investigating historical events and time periods.
8.4.2	Use primary and secondary sources to gather, interpret, analyze and evaluate information related to social studies.	12.1.4	Understand how key events, people and ideas affected United States history.
8.4.3	Use technology to gather, organize, record, interpret and evaluate information related to social studies.	12.1.5	Understand how key events, people, and ideas affected world history.
8.5.1	Know the rights and responsibilities of an effective America citizen.	12.2.2	Understand the foundations, operations and structures of the America political system.
8.6.1	Understand how to use geographic tools to describe and locate physical features and places.	12.3.2	Understand how major economic forces and institutions influence individual decisions of producers, consumers, and investors.
8.6.3	Understand how Earth's physical system influences human systems.	12.3.3	Understand how interdependence affects the global marketplace.
		12.4.1	Use primary sources to analyze, interpret, evaluate, or synthesize information related to social studies.
		12.4.2	Interpret and evaluate the credibility of primary and secondary sources.

Standard 13:   Impacts of Products and Systems: Assess the impact of products and systems.

Academic Cross Walk

Social Studies - Cont.

12.4.3 Use technology to access records, and analyze information related to social studies. 12.5.1 Understand the benefits and challenges of the rights of citizenship. 12.5.2 Understand the responsibilities of citizenship and the components of civic participation. 12.6.1 Understand the relationship between geographic elements and concepts in history, government and economics.	12.6.2 Understand the interactions of geography and the physical and human environment. 12.6.3 Know the characteristics and uses of geographic tools and use these tools to organize and communicate information. 12.7.2 Understand the role of humanities, religion, and beliefs in defining and preserving culture

Standard 14: Medical Technologies: Relate medical technologies for selection and use.

Student Competencies

Introductory: Grades K-5

14 A   Explore different vaccinations that protect people from getting certain diseases.

14 B   Recognize that medicine helps people who are sick to get better.

14 C   Discuss how products are designed specifically to help people take care of themselves.

14 D   Explain how vaccines are designed to prevent diseases from developing and spreading; medicines are designed to relieve symptoms and stop diseases from developing.

14 E   Examine technological advances that have made it possible to create new devices, to repair or replace certain parts of the body, and to provide a means for mobility.

14 F   Identify tools and devices that have been designed to help provide a safe environment.

Core:

Grades 6-8

14 G   Analyze advances and innovations in medical technologies used to improve healthcare.

14 H   Explain different sanitation processes used in the disposal of medical products help to protect people from harmful organisms and disease.

14 I   Express how vaccines developed for use in immunization require specialized technologies to support environments in which a sufficient amount of vaccines are produced.

14 J   Understand how genetic engineering involves modifying the structure of DNA to produce novel genetic make-ups.

Grades 9-12

14 K   Research medical technologies which protects and maintains health (e.g., prevention and rehabilitation, vaccines and pharmaceuticals, medical and surgical procedures, genetic engineering, etc.)

14 L   Illustrate how telemedicine reflects the convergence of technological advances in a number of fields. (e.g. medicine, telecommunications, virtual presence, computer engineering, informatics, artificial intelligence, robotics, materials science,   perceptual psychology, etc.)

14 M   Examine how the sciences of biochemistry and molecular biology have made it possible to manipulate the genetic information found in living creatures.

Standard 14:   Medical Technologies: Relate medical technologies for selection and use.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics & grammar, syntax, diction, & order.

Standard 14: Medical Technologies: Relate medical technologies for selection and use.

Academic Cross Walk

English Language Arts - Cont.

9.3.12 Use technology; ex., publishing software.
9.4.1 Analyze the audience and adjust message and wording to suit purpose.
9.4.4 Engage in a group discussion.
9.4.5 Use critical listening skills; ex., reflection.
9.5.1 Identify existing and developing media.
9.5.2 Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2 Use conventions of grammar related to parts of speech.
9.6.3 Use conventions of punctuation.
10.1.2 Know ways to effectively search electronic databases.
10.1.4 Use relevant information.
10.1.5 Organize information from a variety of sources into a unified whole.
10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7 Paraphrase information.
10.1.11 Present research information.
10.2.1 Summarize information from nonfiction genres.
10.2.2 Identify techniques used in persuasive writing.
10.2.3 Read for a variety of purposes and intents.
10.3.3 Use prewriting techniques to generate ideas.
10.3.7 Use a variety of supporting details.
10.3.8 Use language appropriate to the format of the composition.
10.3.9 Use precise language to describe people, places and things.
10.3.11 Edit and revise compositions with attention to content.
10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1 Analyze the audience and adjust message and wording to suit the purpose.
10.4.2 Use appropriate body language in oral presentations.
10.5.1 Identifying existing and developing media.
10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1 Research topics independently using appropriate sources.
11.1.2 Evaluate and incorporate information from primary sources.
11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4 Verify the quality, accuracy and usefulness of information.
11.1.7 Evaluate the research process and develop strategies for improving it.
11.2.6 Apply prior knowledge of contents to interpret meaning of text.
11.2.7 Read for a variety of purposes and intents.
11.2.10 Use etymology to define words.
11.3.5 Use a variety of supporting details.
11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1 Analyze the audience and adjust message and wording to suit the purpose.
11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2 Critique details, facts, and concepts from nonfiction genres.
12.2.4 Read for a variety of purposes and intents.
12.2.8 Use technical language/jargon to decipher meaning.
12.3.3 Organize the ideas and details of a composition according to purpose.
12.5.1 Identify existing and developing media.
12.5.2 Create a media project for a purpose.
12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 14:   Medical Technologies: Relate medical technologies for selection and use.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.3 Access information using a variety of sources.	12.1.2 Plan a research strategy.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.3 Access information using a variety of sources.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.6 Present research.	12.1.5 Use organizational strategies to record and synthesize information.
8.2.1 Create media products focused for a variety of audiences.	12.1.6 Present research.
8.2.2 Select appropriate communication formats.	12.2.1 Demonstrate awareness of audiences when creating media products.
8.2.3 Use a variety of strategies to present media products.	12.2.2 Synthesize information to create a product that meets a specific need.
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.2.3 Use a variety of criteria to evaluate media products.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.2.4 Use a variety of media & technology to com-
8.3.4 Use the most effective media and technology for specific needs.	12.2.4 municate with communities beyond school.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.4.1 Collaborate in group projects and learning objectives.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.4.2 Develop competence in selecting from a variety of reading, listening, and viewing formats.	12.3.3 Apply strategies for identifying and solving routine hardware and software problems.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.3.4 Explain features and uses of current and emerging media and technology.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.3.5 Explain ways in which social and economic forces influence which technologies will be
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.4.1 developed and used. Work cooperatively and collaboratively when
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.4.2 using media and technology. Develop competence and selectivity in
8.5.4 Understand the past, present, and future impact of technology on society.	12.4.3 reading, listening, and viewing. Demonstrate self-motivation in seeking information.
	12.5.1 Follow school policies for responsible use of information resources.
	12.5.2 Demonstrate proper form of citations and bibliographies.
	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 14:   Medical Technologies: Relate medical technologies for selection and use.

Academic Cross Walk

Math

None

Science

7.2.18.7.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions). Explain the interaction of science and

9-10.2.1 technology with social issues (e.g., mining, natural disasters). Explain how scientific investigations can result in new ideas.

9-10.4.4 Relate DNA, genes, and chromosomes.

9-10.4.5 Explain the relationship between spontaneous changes in DNA and a source of genetic variation.

11-12.2.1 Explain how new knowledge and methods emerge from different types of investigations

11-12.4.2 and public communication among scientists. Explain how types of DNA technology (e.g., genetic engineering, forensic science, cloning) may impact society now and in the future.

11-12.7.4 Explain how science and technology can influence personal, industrial, and cultural decision-making (e.g., organ transplants, cloning, stem cell research, genetic manipulation, use of genetic profile, archeological discoveries, land management, resource management.

Social Studies

8.1.1   Understand the role of chronology and perspective in describing historical events and periods of history.

8.1.4   Understand how key events, people, and ideas contributed to world history.

8.4.3   Use technology to gather, organize, record, interpret, and evaluate information related to social studies.

8.7.1   Understand the relationship between socio-economics and culture.

8.7.2   Understand how culture influences gender roles, ethics, and ideology.

8.7.3   Understand how culture influences family relationships, religion & social institutions.

12.1.1   Understand the role of chronological thinking in describing and investigating historical events and time periods.

12.1.5   Understand how key events, people, and ideas affected world history.

12.4.3   Use technology to access, record, and analyze information related to social studies.

12.5.2   Understand the responsibilities of citizenship and the components of civic participation.

12.7.2   Understand the role of the humanities, religion, and beliefs in defining and preserving culture.

Standard 15: Agricultural and Related Biotechnologies: Understand, select and use agricultural and related biotechnologies.

Student Competencies

Introductory: Grades K-5

15A   Identify the agricultural technologies that make it possible for humans to have food year round while conserving resources.

15 B   Name different tools necessary to control and make up the parts of an ecosystem.

15 C   Describe how artificial ecosystems are human made environments that are designed to function as a unit and are comprised of humans, plants, and animals.

15 D   Examine how agricultural waste can be recycled.

15 E   Determine how various procedures, products, or systems are used in agricultural processes.

Core:

Grades 6-8

15 F   Enumerate the technological advances in agriculture directly affect the time and number of people required to produce food for a large population.

15 G   Identify the wide range of specialized equipment and practices used to improve the production of food, fiber, fuel, and other useful products and in the care of animals.

15 H   Relate how biotechnology applies the principles of biology to create commercial products or processes.

15 I   Explain how human made artificial ecosystem complexes replicate the natural environment.

15 J   Illustrate how the development of refrigeration, freezing, dehydration, preservation, and irradiation provides long-term storage of food and reduces the health risks caused by tainted food.

Grades 9-12

15 K   Classify the agricultural businesses using a wide array of products and systems to produce, process, and distribute food, fiber, fuel, chemical, and other useful products.

15 L   Apply biotechnology applications. (e.g. agriculture, pharmaceuticals, food and beverages, medicine, energy, the environment, genetic engineering, etc.).

15 M   Demonstrate how conservation practices control the environment (e.g. soil erosion, reduce sediment in waterways, conserve water, improve water quality, etc.).

15 N   Specify the knowledge required of artificial ecosystems and the effects of technological development on flora and fauna.

Standard 15: Agricultural and Related Biotechnologies: Understand, select and use agricultural and related biotechnologies.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 15:   Agricultural and Related Biotechnologies: Understand, select and use agricultural and related biotechnologies.

Academic Cross Walk

English Language Arts - Cont.

9.3.12   Use technology; ex., publishing software.
9.4.1   Analyze the audience and adjust message and wording to suit purpose.
9.4.4   Engage in a group discussion.
9.4.5   Use critical listening skills; ex., reflection.
9.5.1   Identify existing and developing media.
9.5.2   Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2   Use conventions of grammar related to parts of speech.
9.6.3   Use conventions of punctuation.
10.1.2   Know ways to effectively search electronic databases.
10.1.4   Use relevant information.
10.1.5   Organize information from a variety of sources into a unified whole.
10.1.6   Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7   Paraphrase information.
10.1.11   Present research information.
10.2.1   Summarize information from nonfiction genres.
10.2.2   Identify techniques used in persuasive writing.
10.2.3   Read for a variety of purposes and intents.
10.3.3   Use prewriting techniques to generate ideas.
10.3.7   Use a variety of supporting details.
10.3.8   Use language appropriate to the format of the composition.
10.3.9   Use precise language to describe people, places and things.
10.3.11   Edit and revise compositions with attention to content.
10.3.13   Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1   Analyze the audience and adjust message and wording to suit the purpose.
10.4.2   Use appropriate body language in oral presentations.
10.5.1   Identifying existing and developing media.
10.5.2   Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1   Research topics independently using appropriate sources.
11.1.2   Evaluate and incorporate information from primary sources.
11.1.3   Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4   Verify the quality, accuracy and usefulness of information.
11.1.7   Evaluate the research process and develop strategies for improving it.
11.2.6   Apply prior knowledge of contents to interpret meaning of text.
11.2.7   Read for a variety of purposes and intents.
11.2.10   Use etymology to define words.
11.3.5   Use a variety of supporting details.
11.3.8   Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1   Analyze the audience and adjust message and wording to suit the purpose.
11.4.2   Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2   Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1   Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5   Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2   Critique details, facts, and concepts from nonfiction genres.
12.2.4   Read for a variety of purposes and intents.
12.2.8   Use technical language/jargon to decipher meaning.
12.3.3   Organize the ideas and details of a composition according to purpose.
12.5.1   Identify existing and developing media.
12.5.2   Create a media project for a purpose.
12.6.1   Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 15: Agricultural and Related Biotechnologies: Understand, select and use agricultural and related biotechnologies.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.3 Access information using a variety of sources.	12.1.2 Plan a research strategy.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.3 Access information using a variety of sources.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.6 Present research.	12.1.5 Use organizational strategies to record and synthesize information.
8.2.1 Create media products focused for a variety of audiences.	12.1.6 Present research.
8.2.2 Select appropriate communication formats.	12.2.1 Demonstrate awareness of audiences when
8.2.3 Use a variety of strategies to present media products.	12.2.2 Creating media products. Synthesize information to create a product
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.2.3 that meets a specific need. Use a variety of criteria to evaluate media products.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.2.4 Use a variety of media and technology to communicate with communities beyond school.
8.3.4 Use the most effective media and technology for specific needs.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.4.1 Collaborate in group projects and learning objectives.	12.3.3 Apply strategies for identifying and solving routine hardware and software problems.
8.4.2 Develop competence in selecting from a variety of reading, listening, and viewing formats.	12.3.4 Explain features and uses of current and emerging media and technology.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.3.5 Explain ways in which social and economic forces influence which technologies will be
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.4.1 developed and used. Work cooperatively and collaboratively when
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.4.2 using media and technology. Develop competence and selectivity in
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.4.3 reading, listening, and viewing. Demonstrate self-motivation in seeking information.
8.5.4 Understand the past, present, and future impact of technology on society.	12.5.1 Follow school policies for responsible use of information resources.
	12.5.2 Demonstrate proper form of citations and bibliographies.
	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 15: Agricultural and Related Biotechnologies: Understand, select and use agricultural and related biotechnologies.

Academic Cross Walk

Math		*Social Studies*	
7.1.4	Use integers to represent and compare quantities.	8.3.3	Know the key features of various kinds of specialized institutions that exist in market economies. Understand how Earth's physical system influences human systems.
7.3.1	Formulate a question, collect, organize, and display data using a bar, line, and circle graph.	8.6.3	
7.5.1	Create tables and graphs to analyze and describe patterns.	8.6.4	Understand how human activity affects the physical environment.
9-10.1.4	Represent a set of data in a matrix.	8.6.5	Understand how geographic methods and tools are used to interpret the past, understand the present, and plan for the future. Understand the relationship between socio-economics and culture.
9-10.3.1	Construct appropriate displays of given data; i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.	8.7.1	
9-10.3.2	Interpret a given visual representation (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisper plots, and scatter plots) for a set of data.	8.7.3	Understand how culture influences family relationships, religion, and social institutions.
9-10.5.13	Interpret a graphical representation of a real-world situation.	12.3.2	Understand how major economic forces and institutions influence individual decisions of producers, consumers, and investors.
9-10.5.15	Approximate and interpret rates of change from graphical and numerical data.	12.3.3	Understand how interdependence effects the global marketplace.
11-12.3.1	Choose, construct, and interpret a display to represent a set of data.	12.6.2	Understand the interactions of geography and the physical and human environment.

Standard 15:   Agricultural and Related Biotechnologies: Understand, select and use agricultural and related biotechnologies.

Academic Cross Walk

Science

7.4.6   Explain how different adaptations help organisms survive.

7.6.2   Identify technologies (e.g., communication, agriculture, information processing, transportation) that are influenced by societies.

7.7.1   Explain how science affects personal health (e.g,injury prevention, immunization, organ transplant, medical scanning device).

8.7.1   Explain the interaction of science and technology with social issues (mining, natural disasters)

9-10.2.1   .Explain how scientific investigations can result in new ideas.

9-10.4.4   Relate DNA, genes, and chromosomes.

9-10.4.5   Explain the relationship between spontaneous changes in DNA & a source of genetic variation.

9-10.5.5   Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards and events (e.g., gap time methods to predict earthquakes and tsunamis).

9-10.6.2   Explain how scientific principles have been used to create common technologies (e.g., household appliances, automotive parts, agricultural equipment, textiles, fabrics, computers, Internet resources, CD-ROMs).

11-12.2.1 Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.

11-12.4.2 Explain how types of DNA technology (e.g., genetic engineering, forensic science, cloning) may impact society now and in the future.

11-12.4.3 Explain how change through time has ensured adaptation to changing environments.

11-12.5.3 Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion, run-off) on the environment and society.

11-12.7.2 Explain ways renewable and nonrenewable resources are managed (e.g., land reclamation, forest management, CRP, hunting licenses, energy-conserving technologies.

11-12.7.4 Explain how science and technology can influence personal, industrial, & cultural decision-making (e.g., organ transplants cloning, stem cell research, generic manipulation, use of genetic profile, archeological discoveries, land management, resource management.

Standard 16: Energy and Power Technologies: Research and develop an understanding of how to select and use energy and power technologies.

Student Competencies

Introductory: Grades K-5

16 A   Observe that energy comes in many forms.

16 B   Recognize that energy should not be wasted.

16 C   Differentiate forms of energy.

16 D   Realize that tools, machines, products, and systems use energy in order to do work.

Core:

Grades 6-8

16 E   Define energy as the ability to do work.

16 F   Demonstrate that energy can be used to do work using many processes.

16 G   Identify power as the rate at which energy is converted from one form to another or transferred   from one place to another, or the rate at which work is done.

16 H   Show that power systems are used to drive and provide propulsion to other technological products and systems.

16 I   Uncover how much of the energy use in our environment is not used efficiently.

Grades 9-12

16 J   Explain how energy cannot be created nor destroyed; however, it can be converted from one form to another.

16 K   Group energy into major forms: thermal, radiant, electrical, mechanical, chemical, nuclear, and   others.

16 L   Discuss how it is impossible to build an engine to perform work that does not exhaust thermal energy to the surroundings.

16 M   Distinguish that energy resources can be renewable or nonrenewable.

16 N   Illustrate how power systems must have a source of energy, a process, and loads.

Standard 16: Energy and Power Technologies: Research and develop an understanding of how to select and use energy and power technologies.

Academic Cross Walk

English Language Arts

7.1.1 Generate and evaluate questions relevant to research topics.

7.1.2 Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.

7.1.3 Question the accuracy and relevance of information.

7.1.4 Organize research information.

7.1.5 Present research findings, including information and evidence from a variety of sources.

7.2.4 Use prior knowledge and experience to aid text comprehension.

7.2.5 Read to be informed, entertained and persuaded.

7.3.6 Incorporate grade-level appropriate vocabulary in writing.

7.3.7 Use criteria to evaluate own and others' writing.

7.3.9 Edit for grammar, mechanics, usage, and spelling.

7.4.2 Use supporting materials for topics development.

7.4.3 Incorporate research into presentations.

7.5.1 Identify existing and developing media.

7.5.2 Construct media messages.

7.5.5 Define plagiarism and its consequences.

7.6.1 Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.

7.6.3 Use grade-appropriate mechanics and usage.

8.1.2 Use a variety of primary and/or secondary sources to access information.

8.2.2 Use prior knowledge and experiences to aid text comprehensive.

8.2.3 Use a variety of strategies to construct meaning from text.

8.3.4 Use free writing and journal writing to develop ideas for writing topics.

8.3.6 Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10 Use feedback and multiple drafts to revise text for specific purposes.

8.3.12 Incorporate a variety of visual aids in publications.

8.4.2 Use supporting materials for topics development.

8.4.3 Speak for different purposes.

8.5.1 Identify existing and developing media.

8.5.2 Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

8.5.6 Define plagiarism and its consequences.

8.6.2 Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.

9.1.1 Choose a broad topic, state the problem or question.

9.1.2 Formulate a preliminary thesis statement.

9.1.3 Cross reference information.

9.1.4 Evaluate relevancy of information.

9.1.5 Organize information from a variety of sources.

9.1.6 Summarize information.

9.1.7 Identify and avoid plagiarism.

9.1.8 Use primary and secondary sources.

9.1.9 Use graphic organizer.

9.2.3 Differentiate between a variety of nonfiction genres.

9.2.6 Demonstrate oral reading fluency.

9.2.7 Access prior knowledge to interpret meaning.

9.2.8 Read for a variety of purposes and intents.

9.2.15 Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.

9.3.1 Write expository text; ex. essays, directions, letters.

9.3.4 Develop a focus for composition; ex., theme.

9.3.5 Organize the ideas and details of a composition according to purpose.

9.3.8 Use supporting details.

9.3.10 Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 16: Energy and Power Technologies: Research and develop an understanding of how to select and use energy and power technologies.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics)
9.6.2	for a variety of purposes.
9.6.3	Use conventions of grammar related to parts of speech.
10.1.2	Use conventions of punctuation.
10.1.4	Know ways to effectively search electronic databases.
10.1.5	Use relevant information.
10.1.6	Organize information from a variety of sources into a unified whole.
10.1.7	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.11	Paraphrase information.
10.2.1	Present research information.
10.2.2	Summarize information from nonfiction genres.
10.2.3	Identify techniques used in persuasive writing.
10.3.3	Read for a variety of purposes and intents.
10.3.7	Use prewriting techniques to generate ideas.
10.3.8	Use a variety of supporting details.
10.3.9	Use language appropriate to the format of the composition.
10.3.11	Use precise language to describe people, places and things.
10.3.13	Edit and revise compositions with attention to content.
10.4.1	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.2	Analyze the audience and adjust message and wording to suit the purpose.
10.5.1	Use appropriate body language in oral presentations.
10.5.2	Identifying existing and developing media. Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise

Standard 16: Energy and Power Technologies: Research and develop an understanding of how to select and use energy and power technologies.

Academic Cross Walk

Library/Tech Literacy

8.1.3 Access information using a variety of sources.	12.1.3 Access information using a variety of sources.
8.1.6 Present research.	12.1.6 Present research.
8.2.1 Create media products focused for a variety of audiences.	12.2.1 Demonstrate awareness of audience when creating media products.
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.3.4 Use the most effective media and technology for specific needs.	12.3.4 Explain features and uses of current and emerging media and technology.
8.4.1 Collaborate in group projects and learning objectives.	12.4.1 Work cooperatively and collaboratively when using media and technology.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.4.3 Demonstrate self-motivation in seeking information.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.4.4 Use a variety of media and technology for personal needs and enjoyment.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.5.1 Follow school policies for responsible use of information resources.
8.5.4 Understand the past, present, and future impact of technology on society.	12.5.4 Understand the impact of equitable access to information in a democracy.

Math

None

Standard 16: Energy and Power Technologies: Research and develop an understanding of how to select and use energy and power technologies.

Academic Cross Walk

Science

7.3.1	Explain how forms of energy can be transferred (e.g., photosynthesis, metabolism, battery).
7.5.3	Identify the Earth's renewable & non-renewable resources (e.g., solar, wind, fossil fuels, water, soil, metals.
8.3.3	Interpret the effect of balanced and unbalanced forces on the motion of an object (e.g., convection currents, orbital motion, tides).
8.3.4	Explain how all objects exert gravitational force & this force is affected by the distance between the masses of the objects.
8.3.6	Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves.
9-10.2.1	Explain how scientific investigations can result in new ideas.
9-10.3.7	Use Newton's Laws to describe the motion of an object.
9-10.3.8	Describe the relationship between kinetic & potential energy in basic transformations (e.g., physical & chemical changes).
9-10.3.10	Describe the differences between series and parallel circuits.
11-12.2.1	Explain how new knowledge & methods emerge from different types of investigations & public communication among scientists.
11-12.3.8	Identify the principles and relationships influencing forces and motion (e.g., gravitational force, vectors, velocity, friction).
11-12.3.10	Apply the law of conservation of energy to a variety of situations.
11-12.3.11	Explain how energy is related to physical changes of matter (e.g., phase changes, temperature changes).
11-12.3.13	Explain how magnetic forces relate to electronic forces.

Social Studies

8.1.3	Understand how key events, people and ideas contributed to United States history.
8.1.4	Understand how key events, people, and ideas contributed to world history.
8.3.1	Understand the principles governing economic decision-making at the state, national and international levels.
8.3.3	Know the key features of various kinds of specialized institutions that exist in market economies.
8.4.1	Use various map forms, tools, and technologies to acquire, process, and report information related to social studies.
8.4.2	Use primary and secondary sources to gather, interpret, analyze, & evaluate information related to social studies.
8.4.3	Use technology to gather, organize, record, interpret, & evaluate information related to social studies.
8.6.1	Understand how to use geographic tools to describe and locate physical features and places.
8.6.3	Understand how Earth's physical system influences human systems.
8.6.4	Understand how human activity affects the physical environment.
8.7.1	Understand the relationship between socio-economics and culture.
12.1.1	Understand the role of chronological thinking in describing and investigating historical events and time periods.
12.5.1	Understand the benefits and challenges of the rights of citizenship.
12.5.2	Understand the responsibilities of citizenship and the components of civic participation.
12.6.2	Understand the interactions of geography and the physical and human environment.

Standard 17: Information and Communication Technologies: Select and use information and communication technologies.

Student Competencies

Introductory: Grades K-5

17 A   Observe that information is data that has been organized.

17 B   Recognize that technology enables people to communicate by sending and receiving information over a distance.

17 C   Explore symbols people use when they communicate by technology.

17 D   Uncover ways to use technology to process information and help humans make decisions and solve problems.

17 E   Give examples of how information can be acquired and sent through a variety of technological sources.

17 F   Explain how communication technology transfers messages among people and/or machines over distances through the use of technology.

17 G   Cross reference letters, characters, icons, and signs that are symbols representing ideas, quantities, elements, and operations.

Core:

Grades 6-8

17 H   Examine information and communication systems that allow information to be transferred from human to human, human to machine, and machine to human.

17 I   Illustrate how communication systems are made up of a source, encoder, transmitter, receiver, decoder, and destination.

17 J   Interpret how the design of a message is influenced by such factors as the intended audience, medium, purpose, and nature of the message.

17 K   Use symbols, measurements, and drawings to promote clear communication by providing a common language to express ideas.

Grades 9-12

17 L   Demonstrate the inputs, processes, and outputs associated with sending and receiving information.

17 M   Information and communication systems allow information to be transferred from human to human, human to machine, machine to human, and machine to machine.

17 N   Develop information and communication systems that can be used to inform, persuade, entertain, control, manage, and educate.

17 O   Show how communication systems are made up of source, encoder, transmitter, receiver, decoder, storage, retrieval, and destination.

17 P   Integrate ways to communicate information.

17 Q   Demonstrate ways that technological knowledge and processes are communicated through a variety of visual, auditory, and tactile stimuli. (e.g. symbols, measurement, conventions, icons, graphic images, and languages that incorporate, etc.).

Standard 17: Information and Communication Technologies: Select and use information and communication technologies.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 17:   Information and Communication Technologies: Select and use information and communication technologies.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 17:   Information and Communication Technologies: Select and use information and communication technologies.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.3 Access information using a variety of sources.	12.1.2 Plan a research strategy.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.3 Access information using a variety of sources.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.6 Present research.	12.1.5 Use organizational strategies to record and synthesize information.
8.2.1 Create media products focused for a variety of audiences.	12.1.6 Present research.
8.2.2 Select appropriate communication formats.	12.2.1 Demonstrate awareness of audiences when
8.2.3 Use a variety of strategies to present media products.	12.2.2 Creating media products. Synthesize information to create a product
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.2.3 that meets a specific need. Use a variety of criteria to evaluate media products.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.2.4 Use a variety of media and technology to communicate with communities beyond school.
8.3.4 Use the most effective media and technology for specific needs.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.4.1 Collaborate in group projects and learning objectives.	12.3.3 Apply strategies for identifying and solving routine hardware and software problems.
8.4.2 Develop competence in selecting from a variety of reading, listening, and viewing formats.	12.3.4 Explain features and uses of current and emerging media and technology.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.3.5 Explain ways in which social and economic forces influence which technologies will be
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.4.1 developed and used. Work cooperatively and collaboratively when
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.4.2 using media and technology. Develop competence and selectivity in
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.4.3 reading, listening, and viewing. Demonstrate self-motivation in seeking information.
8.5.4 Understand the past, present, and future impact of technology on society.	12.5.1 Follow school policies for responsible use of information resources.
	12.5.2 Demonstrate proper form of citations and bibliographies.
	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 17: Information and Communication Technologies: Select and use information and communication technologies.

Academic Cross Walk

Math

7.1.4	Use integers to represent and compare quantities.
7.4.2	Convert unit measurements within the same system (metric and standard) when solving problems.
7.5.6	Graph change over time, e.g., growth, distance, population.
8.1.8	Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems.
9-10.1.4	Represent a set of data in a matrix.
9-10.2.11	Use geometric models to find solutions to problems in mathematics and other disciplines, e.g., art and architecture.
9-10.3.1	Construct appropriate displays of given data, i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.
9-10.3.2	Interpret a given visual representation (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots) of a set of data.
9-10.5.2	Express relations and functions using a variety of representations, i.e., numeric, graphic, symbolic, and verbal.
9-10.5.13	Interpret a graphical representation of a real-world situation.
11-12.3.1	Choose, construct, and interpret a display to represent a set of data.

Social Studies

8.1.1	Understand the role of chronology and perspective in describing historical events and periods of history.
8.1.4	Understand how key events, people, and ideas contributed to world history.
8.4.3	Use technology to gather, organize, record, interpret, and evaluate information related to social studies.
8.6.3	Understand how Earth's physical system influences human systems.
8.6.5	Understand how geographic methods and tools are used to interpret the past, understand the present, and plan for the future.
12.1.1	Understand the role of chronological thinking in describing and investigating historical events and time periods.
12.1.5	Understand how key events, people, and ideas affected world history.
12.3.3	Understand how interdependence affects the global marketplace.
12.4.3	Use technology to access, record, and analyze information related to social studies.
12.6.3	Know the characteristics and uses of geographic tools and use these tools to organize and communicate information.

Science

9-10.2.1	Explain how scientific investigations can result in new ideas.
11-12.2.1	Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.

Standard 18: Transportation Technologies: Research and develop an understanding of how to select and use transportation technologies.

Student Competencies

Introductory: Grades K-5

18 A   Recognize that a transportation system has many parts that work together to help people travel.

18 B   Compare the movement of people or goods from one place to another in water, air, space, and on land.

18 C   Observe that transportation vehicles need to be cared for to prolong their use.

18 D   Use the transportation model to show how people and goods are moved from one place to another.

18 E   Realize that a transportation system may lose efficiency or fail if one part is missing or malfunctioning or if a subsystem is not working.

Core:

Grades 6-8

18 F   Identify that transporting people and goods involves a combination of individuals and vehicles.

18 G   Observe that transportation vehicles are made up of subsystems that must function together for a system to work effectively. (e.g., structural, propulsion, suspension, guidance, control, support, etc.).

18 H   Explain how governmental regulations often influence the design and operation of transportation systems.

18 I   Examine how processes are necessary for the entire transportation system to operate efficiently. (e.g. receiving, holding, storing, loading, moving, unloading, delivering, evaluating, marketing, managing, communicating, using conventions, etc.).

Grades 9-12

18 J   Relate how transportation plays a vital role in the operation of other technologies (e.g. manufacturing, construction, communication, health and safety, agriculture, etc.)

18 K   Demonstrate how intermodalism uses different modes of transportation to move people and goods easily from one mode to another. (e.g. highways, railways, and waterways as part of an interconnected system, etc.).

18 L   Expand on how transportation services and methods have led to a population that is regularly on the move.

Advanced:

18 M   Analyze and model how the design of intelligent and non-intelligent transportation systems depends on many processes and innovative techniques. (M)

Standard 18:   Transportation Technologies: Research and develop an understanding of how to select and use transportation technologies.

Academic Cross Walk

English Language Arts

7.1.1   Generate and evaluate questions relevant to research topics.

7.1.2   Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.

7.1.3   Question the accuracy and relevance of information.

7.1.4   Organize research information.

7.1.5   Present research findings, including information and evidence from a variety of sources.

7.2.4   Use prior knowledge and experience to aid text comprehension.

7.2.5   Read to be informed, entertained and persuaded.

7.3.6   Incorporate grade-level appropriate vocabulary in writing.

7.3.7   Use criteria to evaluate own and others' writing.

7.3.9   Edit for grammar, mechanics, usage, and spelling.

7.4.2   Use supporting materials for topics development.

7.4.3   Incorporate research into presentations.

7.5.1   Identify existing and developing media.

7.5.2   Construct media messages.

7.5.5   Define plagiarism and its consequences.

7.6.1   Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.

7.6.3   Use grade-appropriate mechanics and usage.

8.1.2   Use a variety of primary and/or secondary sources to access information.

8.2.2   Use prior knowledge and experiences to aid text comprehensive.

8.2.3   Use a variety of strategies to construct meaning from text.

8.3.4   Use free writing and journal writing to develop ideas for writing topics.

8.3.6   Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10   Use feedback and multiple drafts to revise text for specific purposes.

8.3.12   Incorporate a variety of visual aids in publications.

8.4.2   Use supporting materials for topics development.

8.4.3   Speak for different purposes.

8.5.1   Identify existing and developing media.

8.5.2   Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

8.5.6   Define plagiarism and its consequences.

8.6.2   Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.

9.1.1   Choose a broad topic, state the problem or question.

9.1.2   Formulate a preliminary thesis statement.

9.1.3   Cross reference information.

9.1.4   Evaluate relevancy of information.

9.1.5   Organize information from a variety of sources.

9.1.6   Summarize information.

9.1.7   Identify and avoid plagiarism.

9.1.8   Use primary and secondary sources.

9.1.9   Use graphic organizer.

9.2.3   Differentiate between a variety of nonfiction genres.

9.2.6   Demonstrate oral reading fluency.

9.2.7   Access prior knowledge to interpret meaning.

9.2.8   Read for a variety of purposes and intents.

9.2.15   Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.

9.3.1   Write expository text; ex. essays, directions, letters.

9.3.4   Develop a focus for composition; ex., theme.

9.3.5   Organize the ideas and details of a composition according to purpose.

9.3.8   Use supporting details.

9.3.10   Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

Standard 18: Transportation Technologies: Research and develop an understanding of how to select and use transportation technologies.

Academic Cross Walk

English Language Arts - Cont.

9.3.12	Use technology; ex., publishing software.
9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 18:   Transportation Technologies: Research and develop an understanding of how to select and use transportation technologies.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.3 Access information using a variety of sources.	12.1.2 Plan a research strategy.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.3 Access information using a variety of sources.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.6 Present research.	12.1.5 Use organizational strategies to record and synthesize information.
8.2.1 Create media products focused for a variety of audiences.	12.1.6 Present research.
8.2.2 Select appropriate communication formats.	12.2.1 Demonstrate awareness of audiences when
8.2.3 Use a variety of strategies to present media products.	12.2.2 Creating media products. Synthesize information to create a product
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.2.3 that meets a specific need. Use a variety of criteria to evaluate media products.
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.2.4 Use a variety of media and technology to communicate with communities beyond school.
8.3.4 Use the most effective media and technology for specific needs.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.4.1 Collaborate in group projects and learning objectives.	12.3.3 Apply strategies for identifying and solving routine hardware and software problems.
8.4.2 Develop competence in selecting from a variety of reading, listening, and viewing formats.	12.3.4 Explain features and uses of current and emerging media and technology.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.3.5 Explain ways in which social and economic forces influence which technologies will be
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.4.1 developed and used. Work cooperatively and collaboratively when
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.4.2 using media and technology. Develop competence and selectivity in
8.5.2 Use level-appropriate methods to cite and document reference sources.	12.4.3 reading, listening, and viewing. Demonstrate self-motivation in seeking information.
8.5.4 Understand the past, present, and future impact of technology on society.	12.5.1 Follow school policies for responsible use of information resources.
	12.5.2 Demonstrate proper form of citations and bibliographies.
	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 18:   Transportation Technologies: Research and develop an understanding of how to select and use transportation technologies.

Academic Cross Walk

Math

None

Science

9-10.2.1   Explain how scientific investigations can result in new ideas.

9-10.5.5   Analyze how evidence of past natural hazards and geologic events has predicted subsequent hazards and events (e.g. Gap time method to predict earthquakes and tsunamis).

11-12.2.1 Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.

Social Studies

8.6.2   Understand the relationship between the characteristics of various world places and regions and historical events and people.

8.6.3   Understand how Earth's physical system influences human systems.

8.6.4   Understand how human activity affects the physical environment.

12.1.2   Understand the principles governing historical analysis and interpretation.

12.6.1   Understand the relationship between geographical elements and concepts in history, government, and economics.

12.6.2   Understand the interactions of geography and the physical and human environment.

12.6.3   Know the characteristics and uses of geographic tools and use these tools to organize and communicate information.

Standard 19: Manufacturing Technologies: Understand, select and use manufacturing technologies.

Student Competencies

Introductory: Grades K-5

19 A   Realize that manufacturing systems produce products in quantity.

19 B   Recognize that manufactured products are designed.

19 C   Use processing systems to convert natural materials into products.

19 D   Utilize manufacturing processes. (e.g. designing products, gathering resources, and using tools to separate, form, combine materials, etc.).

19 E   Show why manufacturing enterprises exist because of a consumption of goods.

Core:

Grades 6-8

19 F   Use mechanical processes related to manufacturing systems to change the form of materials. (e.g. separating, forming, combining, conditioning, etc.).

19 G   Classify manufactured goods as durable and nondurable.

19 H   Explain how the manufacturing process includes designing, developing, making, and servicing products and systems.

19 I   Use chemical technologies to modify or alter chemical substances.

19 J   Determine materials that can be located and removed by extraction processes (e.g. harvesting, drilling, mining, etc.).

19 K   Market a product by informing the public about it as well as assisting in selling and distributing.

Grades 9-12

19 L   Service products to maintain good operating condition.

19 M   Classify how materials have different qualities (natural, synthetic, or mixed).

19 N   Differentiate between durable and nondurable goods.

19 O   Classify manufacturing systems (e.g. customized production, batch production, continuous production, etc.).

19 P   Demonstrate how the interchangeability of parts increases the effectiveness of manufacturing processes.

19 Q   Show how chemical technologies provide a means for humans to alter or modify materials and to produce chemical products.

19 R   Design a marketing strategy (e.g. establishing a product's identity, conducting research on its potential, advertising it, distributing it, selling it, etc.).

Standard 19:   Manufacturing Technologies: Understand, select and use manufacturing technologies.

Academic Cross Walk

English Language Arts

7.1.1	Generate and evaluate questions relevant to research topics.
7.1.2	Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.
7.1.3	Question the accuracy and relevance of information.
7.1.4	Organize research information.
7.1.5	Present research findings, including information and evidence from a variety of sources.
7.2.4	Use prior knowledge and experience to aid text comprehension.
7.2.5	Read to be informed, entertained and persuaded.
7.3.6	Incorporate grade-level appropriate vocabulary in writing.
7.3.7	Use criteria to evaluate own and others' writing.
7.3.9	Edit for grammar, mechanics, usage, and spelling.
7.4.2	Use supporting materials for topics development.
7.4.3	Incorporate research into presentations.
7.5.1	Identify existing and developing media.
7.5.2	Construct media messages.
7.5.5	Define plagiarism and its consequences.
7.6.1	Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.
7.6.3	Use grade-appropriate mechanics and usage.
8.1.2	Use a variety of primary and/or secondary sources to access information.
8.2.2	Use prior knowledge and experiences to aid text comprehensive.
8.2.3	Use a variety of strategies to construct meaning from text.
8.3.4	Use free writing and journal writing to develop ideas for writing topics.

8.3.6	Use prewriting product to create a first draft emphasizing details and referencing sources.
8.3.10	Use feedback and multiple drafts to revise text for specific purposes.
8.3.12	Incorporate a variety of visual aids in publications.
8.4.2	Use supporting materials for topics development.
8.4.3	Speak for different purposes.
8.5.1	Identify existing and developing media.
8.5.2	Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
8.5.6	Define plagiarism and its consequences.
8.6.2	Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.
9.1.1	Choose a broad topic, state the problem or question.
9.1.2	Formulate a preliminary thesis statement.
9.1.3	Cross reference information.
9.1.4	Evaluate relevancy of information.
9.1.5	Organize information from a variety of sources.
9.1.6	Summarize information.
9.1.7	Identify and avoid plagiarism.
9.1.8	Use primary and secondary sources.
9.1.9	Use graphic organizer.
9.2.3	Differentiate between a variety of nonfiction genres.
9.2.6	Demonstrate oral reading fluency.
9.2.7	Access prior knowledge to interpret meaning.
9.2.8	Read for a variety of purposes and intents.
9.2.15	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
9.3.1	Write expository text; ex. essays, directions, letters.
9.3.4	Develop a focus for composition; ex., theme.
9.3.5	Organize the ideas and details of a composition according to purpose.
9.3.8	Use supporting details.
9.3.10	Edit and revise compositions for proper mechanics & grammar, syntax, diction, & order.

Standard 19:   Manufacturing Technologies: Understand, select and use manufacturing technologies.

Academic Cross Walk

English Language Arts - Cont.

9.3.12 Use technology; ex., publishing software.
9.4.1   Analyze the audience and adjust message and wording to suit purpose.
9.4.4   Engage in a group discussion.
9.4.5   Use critical listening skills; ex., reflection.
9.5.1   Identify existing and developing media.
9.5.2   Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2   Use conventions of grammar related to parts of speech.
9.6.3   Use conventions of punctuation.
10.1.2 Know ways to effectively search electronic databases.
10.1.4 Use relevant information.
10.1.5 Organize information from a variety of sources into a unified whole.
10.1.6 Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7 Paraphrase information.
10.1.11 Present research information.
10.2.1 Summarize information from nonfiction genres.
10.2.2 Identify techniques used in persuasive writing.
10.2.3 Read for a variety of purposes and intents.
10.3.3 Use prewriting techniques to generate ideas.
10.3.7 Use a variety of supporting details.
10.3.8 Use language appropriate to the format of the composition.
10.3.9 Use precise language to describe people, places and things.
10.3.11 Edit and revise compositions with attention to content.
10.3.13 Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1 Analyze the audience and adjust message and wording to suit the purpose.
10.4.2 Use appropriate body language in oral presentations.
10.5.1 Identifying existing and developing media.
10.5.2 Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1 Research topics independently using appropriate sources.
11.1.2 Evaluate and incorporate information from primary sources.
11.1.3 Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4 Verify the quality, accuracy and usefulness of information
11.1.7 Evaluate the research process and develop strategies for improving it.
11.2.6 Apply prior knowledge of contents to interpret meaning of text.
11.2.7 Read for a variety of purposes and intents.
11.2.10 Use etymology to define words.
11.3.5 Use a variety of supporting details.
11.3.8 Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1 Analyze the audience and adjust message and wording to suit the purpose.
11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2 Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1 Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5 Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2 Critique details, facts, and concepts from nonfiction genres.
12.2.4 Read for a variety of purposes and intents.
12.2.8 Use technical language/jargon to decipher meaning.
12.3.3 Organize the ideas and details of a composition according to purpose.
12.5.1 Identify existing and developing media.
12.5.2 Create a media project for a purpose.
12.6.1 Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 19:   Manufacturing Technologies: Understand, select and use manufacturing technologies.

Academic Cross Walk

Library/Tech Literacy

8.1.1 Define a research problem or task.	12.1.1 Define a research problem or task.
8.1.3 Access information using a variety of sources.	12.1.2 Plan a research strategy.
8.1.4 Use a variety of criteria to evaluate and select information for research.	12.1.3 Access information using a variety of sources.
8.1.5 Use organizational strategies to gather, record, and synthesize information.	12.1.4 Use a variety of criteria to evaluate and select information for research.
8.1.6 Present research.	12.1.5 Use organizational strategies to record and synthesize information.
8.2.2 Select appropriate communication formats.	12.1.6 Present research.
8.2.3 Use a variety of strategies to present media products.	12.2.1 Demonstrate awareness of audiences when
8.3.1 Use appropriate terminology and concepts associated with media and technology.	12.2.2 Creating media products. Synthesize information to create a product
8.3.2 Use and refine skills and procedures needed to operate various media and technology.	12.2.3 that meets a specific need. Use a variety of criteria to evaluate media.
8.3.4 Use the most effective media and technology for specific needs.	12.2.4 Use a variety of media and technology to communicate with communities beyond school.
8.3.5 Understand the potential and limitations of existing media and technology.	12.3.1 Explain and use appropriate terminology and concepts associated with media and technology.
8.4.1 Collaborate in group projects and learning objectives.	12.3.2 Demonstrate advanced knowledge and skills in various media and technology.
8.4.2 Develop competence in selecting from a variety of reading, listening, and viewing formats.	12.3.3 Apply strategies for identifying and solving routine hardware and software problems.
8.4.3 Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.	12.3.4 Explain features and uses of current and emerging media and technology.
8.4.4 Understand different perspectives and the values and beliefs supporting them.	12.3.5 Explain ways in which social and economic forces influence which technologies will be developed and used.
8.5.1 Follow school guidelines for responsible use of technology and information resources.	12.4.1 Work cooperatively and collaboratively when using media and technology.
8.5.2 Use level appropriate methods to cite and document reference sources.	12.4.2 Develop competence and selectivity in reading, listening, and viewing.
8.5.4 Understand the past, present, and future impact of technology on society.	12.4.3 Demonstrate self-motivation in seeking information.
	12.5.1 Follow school policies for responsible use of information resources.
	12.5.2 Demonstrate proper form of citations and bibliographies.
	12.5.4 Understand the impact of equitable access to information in a democracy.

Standard 19:   Manufacturing Technologies: Understand, select and use manufacturing technologies.

Academic Cross Walk

Math	*Science*
7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems. 7.4.4 Select and use appropriate tools and units to determine the measurements needed for calculating perimeter, circumference, area, surface area, and volume. 8.4.2 Compare unit measurements between systems; e.g., a yard is almost a meter.	7.5.3 Identify the Earth's renewable and nonrenewable resources (e.g., solar, wind, fossil fuels, water, soil, metals). 9-10.2.1 Explain how scientific investigations can result in new ideas. 9-10.3.1 Classify elements according to similar 9-10.6.2 properties (e.g., metal, nonmetal, solids, liquids, gases). Explain how scientific principles have been used to create common technologies (e.g., household appliances, automotive parts, agricultural equipment, textiles, fabrics, computers, Internet resources, CD-ROMs). 9-10.6.3 Explain how emerging technologies (e.g., genetic manipulation, biofuels, and hydrogen fuels) may impact society and the environment. 11-12.2.1 Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists. 11-12.5.3 Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion, run-off) on the environment and society. 11-12.6.2 Identify examples of how new technologies advance science. 11-12.7.4 Explain how science and technology can influence personal, industrial, and cultural decision-making (e.g., organ transplants, cloning, stem cell research, genetic manipulation, use of genetic profile, archeological discoveries, land management, resource management).

Standard 19: Manufacturing Technologies: Understand, select and use manufacturing technologies.

Academic Cross Walk

Social Studies

8.1.3 Understand how key events, people and ideas contributed to United States history.	8.5.2 Understand the necessity of citizen participation in the political process.
8.1.4 Understand how key events, people, and ideas contributed to world history.	8.6.1 Understand how to use geographic tools to describe and locate physical features and places.
8.2.3 Understand the powers of the legislature, executive, and judicial branches and the concept of checks and balances.	8.6.3 Understand how Earth's physical system influences human systems.
8.2.4 Understand the structure, function, purpose, and role of the local, state, tribal, and federal governments.	8.6.4 Understand how human activity affects the physical environment.
	8.6.5 Understand how geographic methods and tools are used to interpret the past, understand the present, and plan for the future.
8.3.1 Understand the principles governing economic decision-making at the state, national, and international levels.	8.7.1 Understand the relationship between socio-economics and culture.
8.3.3 Know the key features of various kinds of specialized institutions that exist in market economies.	12.1.4 Understand how key events, people, and ideas affected United States history.
8.4.1 Use various map forms, tools, and technologies to acquire, process, and report information related to social studies.	12.1.5 Understand how key events, people, and ideas affected World history.
8.4.2 Use primary and secondary sources to gather, interpret, analyze, and evaluate information related to social studies.	12.3.1 Understand the principles and problems of traditional, command, market, and mixed economies.
8.4.3 Use technology to gather, organize, record, interpret, and evaluate information related to social studies.	12.3.2 Understand how major economic forces and institutions influence individual decisions of producers, consumers, and investors.
8.5.1 Know the rights and responsibilities of an effective American citizen.	12.3.3 Understand how interdependence affects the global marketplace.

Standard 20: Construction Technologies: Understand, select and use construction technologies.

Student Competencies

Introductory: Grades K-5

20 A   Explain that people live, work, and go to school in buildings, which are of different types of buildings

20 B   Realize that the type of structure determines how the parts are put together.

20 C   Discover that modern communities are usually planned according to guidelines.

20 D   Investigate why structures need to be maintained.

20 E   Recognize that many systems are used in buildings.

Core:

Grades 6-8

20 F   Show that the selection of designs for structures is based on factors. (e.g. building laws and codes, style, convenience cost, climate, function, etc.)

20 G   Explore why structures rest on a foundation.

20 H   Describe why some structures are temporary while others are permanent.

20 I   Identify the variety of subsystems contained in buildings.

Grades 9-12

20 J   Relate that infrastructure is the underlying base or basic framework of a system.

20 K   Evaluate why structures are constructed using a variety of processes and procedures.

20 L   Illustrate why the design of structures includes a number of requirements.

20 M   Explain why structures require maintenance, alteration, or renovation periodically to improve them or to alter their intended use.

20 N   Specify that structures can include prefabricated materials.

Standard 20: Construction Technologies: Understand, select and use construction technologies.

Academic Cross Walk

English Language Arts

7.1.1   Generate and evaluate questions relevant to research topics.

7.1.2   Use a variety of sources, such as computer catalogs, magazines, and newspapers to access information.

7.1.3   Question the accuracy and relevance of information.

7.1.4   Organize research information.

7.1.5   Present research findings, including information and evidence from a variety of sources.

7.2.4   Use prior knowledge and experience to aid text comprehension.

7.2.5   Read to be informed, entertained and persuaded.

7.3.6   Incorporate grade-level appropriate vocabulary in writing.

7.3.7   Use criteria to evaluate own and others' writing.

7.3.9   Edit for grammar, mechanics, usage, and spelling.

7.4.2   Use supporting materials for topics development.

7.4.3   Incorporate research into presentations.

7.5.1   Identify existing and developing media.

7.5.2   Construct media messages.

7.5.5   Define plagiarism and its consequences.

7.6.1   Use grade-appropriate conventions of grammar; ex., capitalization, dialogue, title of people, things, punctuation, commas, quotation marks, colons/business letters and in time, underlining, italicizing, usage, double negatives.

7.6.3   Use grade-appropriate mechanics and usage.

8.1.2   Use a variety of primary and/or secondary sources to access information.

8.2.2   Use prior knowledge and experiences to aid text comprehensive.

8.2.3   Use a variety of strategies to construct meaning from text.

8.3.4   Use free writing and journal writing to develop ideas for writing topics.

8.3.6   Use prewriting product to create a first draft emphasizing details and referencing sources.

8.3.10   Use feedback and multiple drafts to revise text for specific purposes.

8.3.12   Incorporate a variety of visual aids in publications.

8.4.2   Use supporting materials for topics development.

8.4.3   Speak for different purposes.

8.5.1   Identify existing and developing media.

8.5.2   Access media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

8.5.6   Define plagiarism and its consequences.

8.6.2   Use conventions of grammar related to parts of speech; ex. verbs, progressive tense.

9.1.1   Choose a broad topic, state the problem or question.

9.1.2   Formulate a preliminary thesis statement.

9.1.3   Cross reference information.

9.1.4   Evaluate relevancy of information.

9.1.5   Organize information from a variety of sources.

9.1.6   Summarize information.

9.1.7   Identify and avoid plagiarism.

9.1.8   Use primary and secondary sources.

9.1.9   Use graphic organizer.

9.2.3   Differentiate between a variety of nonfiction genres.

9.2.6   Demonstrate oral reading fluency.

9.2.7   Access prior knowledge to interpret meaning.

9.2.8   Read for a variety of purposes and intents.

9.2.15   Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.

9.3.1   Write expository text; ex. essays, directions, letters.

9.3.4   Develop a focus for composition; ex., theme.

9.3.5   Organize the ideas and details of a composition according to purpose.

9.3.8   Use supporting details.

9.3.10   Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.

9.3.12   Use technology; ex., publishing software.

Standard 20: Construction Technologies: Understand, select and use construction technologies.

Academic Cross Walk

English Language Arts - Cont.

9.4.1	Analyze the audience and adjust message and wording to suit purpose.
9.4.4	Engage in a group discussion.
9.4.5	Use critical listening skills; ex., reflection.
9.5.1	Identify existing and developing media.
9.5.2	Access media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
9.6.2	Use conventions of grammar related to parts of speech.
9.6.3	Use conventions of punctuation.
10.1.2	Know ways to effectively search electronic databases.
10.1.4	Use relevant information.
10.1.5	Organize information from a variety of sources into a unified whole.
10.1.6	Use a style sheet, such as MLA or APA, for citing primary and secondary sources.
10.1.7	Paraphrase information.
10.1.11	Present research information.
10.2.1	Summarize information from nonfiction genres.
10.2.2	Identify techniques used in persuasive writing.
10.2.3	Read for a variety of purposes and intents.
10.3.3	Use prewriting techniques to generate ideas.
10.3.7	Use a variety of supporting details.
10.3.8	Use language appropriate to the format of the composition.
10.3.9	Use precise language to describe people, places and things.
10.3.11	Edit and revise compositions with attention to content.
10.3.13	Use knowledge of sentence structure and sentence construction to edit and revise text.
10.4.1	Analyze the audience and adjust message and wording to suit the purpose.
10.4.2	Use appropriate body language in oral presentations.
10.5.1	Identifying existing and developing media.
10.5.2	Use media (television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.

11.1.1	Research topics independently using appropriate sources.
11.1.2	Evaluate and incorporate information from primary sources.
11.1.3	Evaluate reliability, validity, comprehensiveness, authors' bias, and authors' expertise.
11.1.4	Verify the quality, accuracy and usefulness of information.
11.1.7	Evaluate the research process and develop strategies for improving it.
11.2.6	Apply prior knowledge of contents to interpret meaning of text.
11.2.7	Read for a variety of purposes and intents.
11.2.10	Use etymology to define words.
11.3.5	Use a variety of supporting details.
11.3.8	Incorporate visual aids (ex., graphs, tables) into written work to enhance meaning.
11.4.1	Analyze the audience and adjust message and wording to suit the purpose.
11.4.2	Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions.
11.5.2	Apply media (ex., television, film, music, electronic databases, video, DVDs, comics) for a variety of purposes.
11.6.1	Use conventions of grammar, usage and punctuation to edit and revise.
12.1.5	Evaluate the research process and apply strategies to a variety of writing purposes.
12.2.2	Critique details, facts, and concepts from nonfiction genres.
12.2.4	Read for a variety of purposes and intents.
12.2.8	Use technical language/jargon to decipher meaning.
12.3.3	Organize the ideas and details of a composition according to purpose.
12.5.1	Identify existing and developing media.
12.5.2	Create a media project for a purpose.
12.6.1	Use conventions of grammar, usage, and punctuation to edit and revise.

Standard 20:   Construction Technologies: Understand, select and use construction technologies.

Academic Cross Walk

Library/Tech Literacy

8.1.1	Define a research problem or task.
8.1.3	Access information using a variety of sources.
8.1.4	Use a variety of criteria to evaluate and select information for research.
8.1.5	Use organizational strategies to gather, record, and synthesize information.
8.1.6	Present research.
8.2.2	Select appropriate communication formats.
8.2.3	Use a variety of strategies to present media products.
8.3.1	Use appropriate terminology and concepts associated with media and technology.
8.3.2	Use and refine skills and procedures needed to operate various media and technology.
8.3.4	Use the most effective media and technology for specific needs.
8.3.5	Understand the potential and limitations of existing media and technology.
8.4.1	Collaborate in group projects and learning objectives.
8.4.2	Develop competence in selecting from a variety of reading, listening, and viewing formats.
8.4.3	Demonstrate self-motivation and increasing responsibility for learning by pursuing information related to personal interests.
8.4.4	Understand different perspectives and the values and beliefs supporting them.
8.5.1	Follow school guidelines for responsible use of technology and information resources.
8.5.2	Use level appropriate methods to cite and document reference sources.
8.5.4	Understand the past, present, and future impact of technology on society.

12.1.1	Define a research problem or task.
12.1.2	Plan a research strategy.
12.1.3	Access information using a variety of sources.
12.1.4	Use a variety of criteria to evaluate and select information for research.
12.1.5	Use organizational strategies to record and synthesize information.
12.1.6	Present research.
12.2.1	Demonstrate awareness of audiences when creating media products.
12.2.2	Synthesize information to create a product that meets a specific need.
12.2.3	Use a variety of criteria to evaluate media products.
12.2.4	Use a variety of media and technology to communicate with communities beyond school.
12.3.1	Explain and use appropriate terminology and concepts associated with media and technology.
12.3.2	Demonstrate advanced knowledge and skills in various media and technology.
12.3.3	Apply strategies for identifying and solving routine hardware and software problems.
12.3.4	Explain features and uses of current and emerging media and technology.
12.3.5	Explain ways in which social and economic forces influence which technologies will be developed and used.
12.4.1	Work cooperatively and collaboratively when using media and technology.
12.4.2	Develop competence and selectivity in reading, listening, and viewing.
12.4.3	Demonstrate self-motivation in seeking information.
12.5.1	Follow school policies for responsible use of information resources.
12.5.2	Demonstrate proper form of citations and bibliographies.
12.5.4	Understand the impact of equitable access to information in a democracy.

Standard 20: Construction Technologies: Understand, select and use construction technologies.

Academic Cross Walk

Math	*Science*
7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems.	7.5.3 Identify the Earth's renewable and nonrenewable resources (e.g., solar, wind, fossil fuels, water, soil, metals).
7.4.4 Select and use appropriate tools and units to determine the measurements needed for calculating perimeter, circumference, area, surface area, and volume.	9-10.2.1 Explain how scientific investigations can result in new ideas.
8.4.2 Compare unit measurements between systems; e.g., a yard is almost a meter	9-10.3.1 Classify elements according to similar properties (e.g., metal, nonmetal, solids, liquids, gases).
	9-10.6.2 Explain how scientific principles have been used to create common technologies (e.g., household appliances, automotive parts, agricultural equipment, textiles, fabrics, computers, Internet resources, CD-ROMs).
	9-10.6.3 Explain how emerging technologies (e.g., genetic manipulation, biofuels, and hydrogen fuels) may impact society and the environment.
	11-12.2.1 Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists.
	11-12.5.3 Explain the short-term and long-term effects of chemical processes (e.g., acid rain, CO_2 emissions, ozone depletion, run-off) on the environment and society.
	11-12.6.2 Identify examples of how new technologies advance science.
	11-12.7.4 Explain how science and technology can influence personal, industrial, and cultural decision-making (e.g., organ transplants, cloning, stem cell research, genetic manipulation, use of genetic profile, archeological discoveries, land management, resource management).

Standard 20:   Construction Technologies: Understand, select and use construction technologies.

Academic Cross Walk

Social Studies

8.1.3	Understand how key events, people and ideas contributed to United States history.
8.1.4	Understand how key events, people, and ideas contributed to world history.
8.2.3	Understand the powers of the legislature, executive, and judicial branches and the concept of checks and balances.
8.2.4	Understand the structure, function, purpose, and role of the local, state, tribal, and federal governments.
8.3.1	Understand the principles governing economic decision-making at the state, national, and international levels.
8.3.3	Know the key features of various kinds of specialized institutions that exist in market economies.
8.4.1	Use various map forms, tools, and technologies to acquire, process, and report information related to social studies.
8.4.2	Use primary and secondary sources to gather, interpret, analyze, and evaluate information related to social studies.
8.4.3	Use technology to gather, organize, record, interpret, and evaluate information related to social studies.
8.5.1	Know the rights and responsibilities of an effective American citizen.
8.5.2	Understand the necessity of citizen participation in the political process.
8.6.1	Understand how to use geographic tools to describe and locate physical features and places.
8.6.3	Understand how Earth's physical system influences human systems.
8.6.4	Understand how human activity affects the physical environment.
8.6.5	Understand how geographic methods and tools are used to interpret the past, understand the present, and plan for the future.
8.7.1	Understand the relationship between socio-economics and culture.
12.1.4	Understand how key events, people, and ideas affected United States history.
12.1.5	Understand how key events, people, and ideas affected World history.
12.3.1	Understand the principles and problems of traditional, command, market, and mixed economies.
12.3.2	Understand how major economic forces and institutions influence individual decisions of producers, consumers, and investors.
12.3.3	Understand how interdependence affects the global marketplace.